

EasyNote NS11HR

SERVICEGUIDE

Revision History

Please refer to the table below for the updates made on the EasyNote NS11HR service guide.

| Date | Chapter | Updates |
|------|---------|---------|
| | | |



Service guide files and updates are available on the ACER/CSD web. For more information, refer to <http://csd.acer.com.tw>

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CHAPTER 1

System specifications

- [Preface](#)
- [Features](#)
- [System block diagram](#)
- [Hardware specifications and configurations](#)

Preface

Conventions

The following conventions are used in this manual:



Warning

Indicates a potential for personal injury.



Caution

Indicates a potential loss of data or damage to equipment.



Important

Indicates information that is important to know for the proper completion of a procedure, choice of an option, or completing a task.

General information

Before using this information and the product it supports, read the following general information.

This service guide provides you with all technical information relating to the basic configuration decided for Acer's global product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (such as add-on cards, modems, or extra memory capabilities). These localized features are not covered in this generic service guide. In such cases, contact your regional offices or the responsible personnel/channel to provide you with further technical details.

When ordering FRU parts: Check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it may not be noted in this printed service guide.

Acer-authorized Service Providers: Your Acer office may have a different part number code to those given in the FRU list of this printed service guide. You must use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Features

Platform

- Processor
 - Intel® Core i3 Processor: 2310M (2.1 GHz)
 - Intel Core i5 Processors: 2410M (2.3 GHz), 2520M (2.5 GHz), 2540M (2.6 GHz)
 - Intel Core i7 Processors: 2620M (2.7 GHz), 2630QM (2.0 GHz), 2720QM (2.2 GHz), 2820QM (2.3 GHz)
- Core logic: Mobile Intel HM65 Express Chipset
- Wireless
 - Foxconn Wirelss LAN Atheros HB95BG (HM) T77H121.10
 - Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)
 - Foxconn Wireless LAN Broadcomm 43225 2x2 BGN (HM) T77H103.00
 - Liteon Wireless LAN Atheris HB97 2x2 BGN (HM) WN6603AH
 - Liteon Wireless LAN Realtek 8192SE BGN WN6603LH (2x2 BGN)
 - Lan Intel WLAN TBD Taylor Peak 2x2 AGN

System memory

- DDR3 SO-DIMM
- Data rate supported: 1066/1333 MT/s
- Maximum memory: 8 GB (using two SO-DIMM modules)

Display and graphics

- 14.0" WXGA LED LCD panel
- VGA controller:
 - Discrete model: NVIDIA® N12P-GS or NVIDIA N12P-GV with DDR3-800 1 GB or 2 GB VRAM with DDR3-800 1 GB or 2 GB VRAM
 - UMA model: Integrated in the Mobile Intel HM65 Express Chipset
- Dual independent display support
- 16.7 million colors
- MPEG-2/DVD hardware-assisted capability (acceleration)
- MPEG-2/DVD decoding (for selected models)
- WMV9 (VC-1) support (acceleration)
- WMV9 (VC-1) and H.264 (AVC) decoding (for selected models)
- HDMI™ (High-Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support

Storage subsystem

- Industry standard 2.5" SATA hard drive (250–750 GB)
- Optical drive options:
 - Blu-ray Disc™/DVD-Super Multi double-layer drive
 - DVD-Super Multi double-layer drive
- 5-in-1 card reader, supporting Secure Digital™ (SD), MultiMediaCard (MMC), Memory Stick® (MS), Memory Stick PRO™ (MS PRO), xD-Picture Card™ (xD)

Input devices

- 86-, 87-, or 91-key keyboard, 2.5 mm (minimum) key travel
- Twelve function keys, four cursor keys, one Windows® key
- Multi-touch touchpad pointing device

Audio

- Two built-in stereo speakers
- Internal analog microphone
- Realtek Audio Codec ALC271X
- Supports Dolby Advanced Audio technology
- MS-Sound compatible

Communication

- Integrated webcam
- WLAN: Foxconn Wireless LAN Atheros HB95BG (HM) T77H121.10, Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM), Foxconn Wireless LAN Broadcom 43225 2x2 BGN (HM) T77H103.00, Liteon Wireless LAN Atheros HB97 2x2 BGN (HM) WN6603AH, Liteon Wireless LAN Realtek 8192SE BGN WN6603LH (2x2 BGN), Lan Intel WLAN TBD Taylor Peak 2x2 AGN
- WPAN: Foxconn Bluetooth ATH AR3011, BRM 2046 BT 2.1, BRM 2070 BT 2.1, BRM 2046 BT3.0, BRM 2070 BT 3.0, or ATH BU12 BT 3.0
- LAN: Broadcom BCM57785X

I/O ports

- External display (VGA) port
- Microphone in
- Headphone
- HDMI™ port with HDCP support
- USB 2.0 port (two)
- USB 2.0/3.0 port (one)
- Ethernet (RJ45) jack
- DC in jack for AC adapter

Security

- Kensington lock slot
- BIOS-based user, supervisor, and HDD passwords

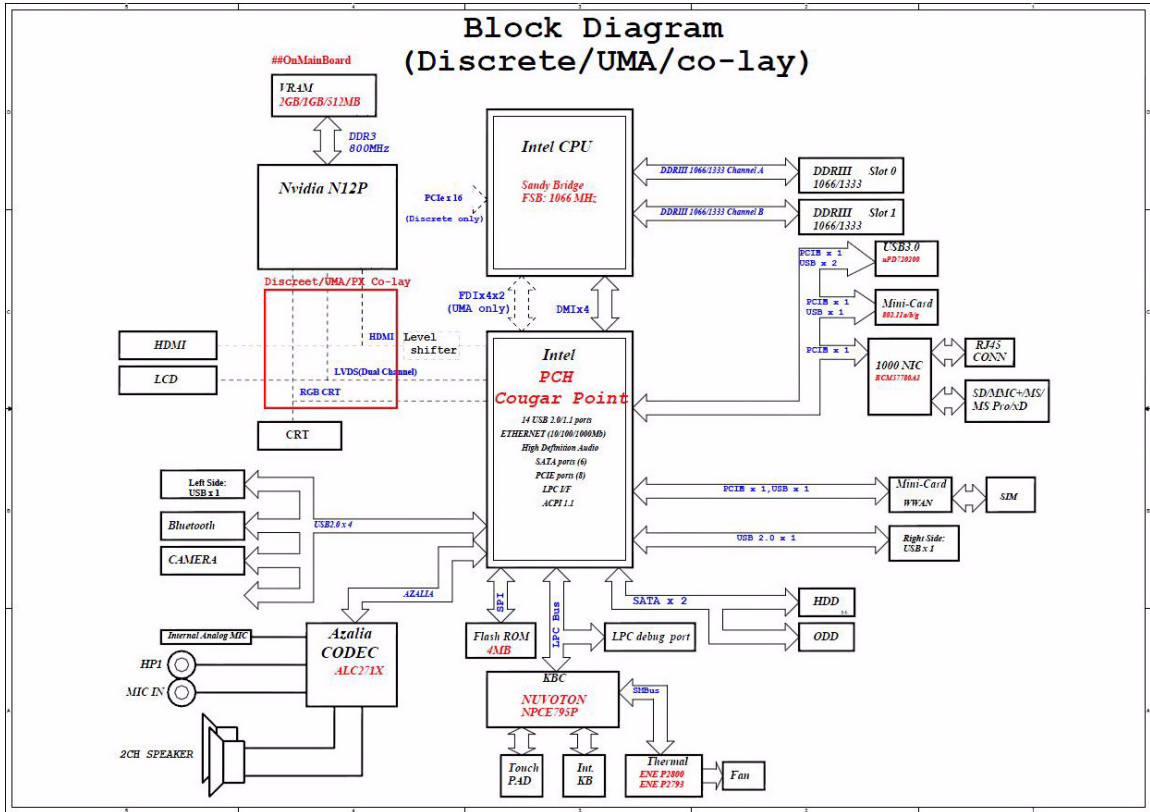
Physical specifications

- Dimensions: 342 x 245 x 37 mm (13.46 x 9.64 x 1.46 in)
- Weight: < 2.28 kg (5.027 lb) (including battery)

Environmental specifications

- Temperature
 - Operating: 32 °F to 90 °F (0 °C to 35 °C)
 - Non-operating: -4 °F to 140 °F (-20 °C to 60 °C)
- Humidity (non-condensing)
 - Operating: 10% to 90%
 - Non-operating: 5% to 95%

System block diagram



Hardware specifications and configurations

CPU

| Item | Specification |
|-------------|--|
| CPU type | <ul style="list-style-type: none"> ▪ Intel Core i3 Processor: 2310M (2.1 GHz) ▪ Intel Core i5 Processors: 2410M (2.3 GHz), 2520M (2.5 GHz), 2540M (2.6 GHz) ▪ Intel Core i7 Processors: 2620M (2.7 GHz), 2630QM (2.0 GHz), 2720QM (2.2 GHz), 2820QM (2.3 GHz) |
| Core logic | Mobile Intel HM65 Express Chipset |
| Socket type | LGA 1155 |

Controllers

| Item | Controller |
|--------------------|---|
| Core logic | Mobile Intel HM65 Express Chipset |
| VGA | <ul style="list-style-type: none"> ▪ Discrete model: NVIDIA® N12P-GS or NVIDIA N12P-GV with DDR3-800 1 GB or 2 GB VRAM ▪ UMA model: Integrated in the Mobile Intel HM65 Express Chipset |
| LAN | Broadcom BCM57785X |
| USB 2.0 | Mobile Intel HM65 Express Chipset |
| Bluetooth | Foxconn Bluetooth ATH AR3011, BRM 2046 BT 2.1, BRM 2070 BT 2.1, BRM 2046 BT3.0, BRM 2070 BT 3.0, or ATH BU12 BT 3.0 |
| Wireless LAN | <ul style="list-style-type: none"> ▪ Foxconn Wirelss LAN Atheros HB95BG (HM) T77H121.10 ▪ Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM) ▪ Foxconn Wireless LAN Broadcomm 43225 2x2 BGN (HM) T77H103.00 ▪ Liteon Wireless LAN Atheris HB97 2x2 BGN (HM) WN6603AH ▪ Liteon Wireless LAN Realtek 8192SE BGN WN6603LH (2x2 BGN) ▪ Lan Intel WLAN TBD Taylor Peak 2x2 AGN |
| Memory card reader | Alcor AU6433 |
| Audio codec | Realtek ALC272 |

BIOS

| Item | Specification |
|--------------|---------------|
| BIOS vendor | Phoenix |
| BIOS version | 1.02 |

| Item | Specification |
|-----------------------|--|
| Supported protocols | <ul style="list-style-type: none"> ▪ Legacy BIOS and EFI architecture support ▪ ACPI 3.0b compliance ▪ PXE specification version 2.1 ▪ SMBIO Reference specification version 2.5 or later ▪ USB specification revision 1.1/2.0/3.0 ▪ ASF specification version 2.0 or later ▪ PCI Express base specification revision 2.1 ▪ PCI BIOS specification revision 2.1 ▪ BIOS Boot specification version 1.01 ▪ Simple boot flag specification version 2.1 ▪ System management bus specification version 2.0 ▪ AHCI support ▪ Microsoft XP/Vista/Windows 7 logo program ▪ Microsoft SLP 1.0 support ▪ Microsoft OA 2.0/2.1 support |
| BIOS password control | Manually set |

Memory

| Item | Specification |
|------------------------------|---|
| Memory controller | Built-in |
| Memory size | 0 MB (no on-board memory) |
| SO-DIMM socket number | 2 sockets |
| Supports maximum memory size | 8 GB |
| Supports SO-DIMM type | DDR3 synchronous DRAM |
| Supports data rate | 1066/1333 MT/s |
| Supports SO-DIMM package | 204-pin SO-DIMM |
| Memory module combinations | You can install memory modules in any combination as long as they match the above specifications. |

Hard disk drive

| Item | Specification | | | | |
|--|---|---|---|--|---|
| Models | Seagate ST9250315AS Toshiba MK2565GSX HGST HTS545025B9 A300 WD WD2500BPVT- 22ZEST0 | Seagate ST9320310AS Toshiba MK3265GSX HGST HTS545032B9 A300/HTS5432 32A7A384 WD WD3200BPVT- 22ZEST0 | Seagate ST9500325AS Toshiba MK5065GSX HGST HTS545050B9 A300 WD WD5000BPVT- 22HXZT1 | Toshiba MK6465GSX WD WD6400BPVT- 22HXZT1 | Seagate ST9750423AS Toshiba MK7559GSX HGST HTS547575A9 E384 WD WD7500BPVT- 22HXZT1 |
| Capacity (MB) | 250000 | 320000 | 500000 | 640000 | 750000 |
| Bytes per sector | 512 | 512 | 512 | 512 | 512 |
| Data heads | 4 | 4 | 4 | 4 | 4 |
| Drive Format | | | | | |
| Disks | 2 | 2 | 2 | 2 | 2 |
| Spindle speed (RPM) | 5400 | 5400 | 5400 | 5400 | 5400 |
| Performance Specifications | | | | | |
| Buffer size (MB) | 8 | 8 | 8 | 8 | 8 |
| Interface | SATA | SATA | SATA | SATA | SATA |
| Max. media transfer rate (disk-buffer, Mbytes/s) | 100 MB/s ³ | 3.0 GB/s | 3.0 GB/s | 3.0 GB/s | 3.0 GB/s |
| DC Power Requirements | | | | | |
| Voltage tolerance | 5V (DC) ± 5% | 5V (DC) ± 5% | 5V (DC) ± 5% | 5V (DC) ± 5% | 5V (DC) ± 5% |

Optical drive

| Item | Specification | |
|---------------------------|--|--|
| Models | HLDS Super-Multi Drive GT32N/GT34N Panasonic Super-Multi Drive UJ890A/UJ8A0 Pioneer Super-Multi Drive DVR-TD10RS PLDS Super-Multi Drive DS-8A5SH Sony Super-Multi Drive AD-7585H Toshiba Super-Multi Drive TS-L633F | HLDS BD Combo CT30N Panasonic UJ141AL Pioneer BD Combo BDC-TD03RS PLDS BD Combo DS-4E1S/DS-6E2SH Sony BD Combo 4X BC-5540H Panasonic BD RW UJ240A/UJ240AF |
| Performance Specification | | |

CHAPTER 1: System specifications

| Item | Specification |
|------------------------|--|
| Transfer rate (KB/sec) | <p>Sustained:</p> <ul style="list-style-type: none"> ▪ with CD: Max 3.6Mbytes/sec ▪ with DVD: Max 10.08Mbytes/sec <p>Sustained:</p> <ul style="list-style-type: none"> ▪ with CD: Max 3.6Mbytes/sec ▪ with DVD: Max 10.8Mbytes/sec ▪ with BD: Max 11Mbytes/sec |
| Buffer Memory | <p>2MB</p> <ul style="list-style-type: none"> ▪ for CD/DVD: 2MB ▪ for BD: 4.5MB |
| Interface | SATA |
| Applicable disc format | <p>CD: CD-DA, CD-ROM, CD-ROM XA, Photo CD (multi-session), Video CD, Cd-Extra (CD+), CD-text</p> <p>DVD: DVD-VIDEO, DVD-ROM, DVD-R (3.9GB, 4.7GB) DVD-R DL, DVD-RW, DVD-RAM, DVD+R, DVD+R DL, DVD+RW</p> <p>CD:</p> <p>CD-DA (Red Book) - Standard Audio CD & CD-TEXT</p> <p>CD-ROM (Yellow Book Mode1 & 2) - Standard Data</p> <p>CD-ROM XA (Mode2 Form1 & 2) - Photo CD, Multi-Session</p> <p>CD-I (Green Book, Mode2 Form1 & 2, Ready, Bridge)</p> <p>CD-Extra/ CD-Plus (Blue Book) - Audio & Text/Video</p> <p>Video-CD (White Book) - MPEG1 Video</p> <p>CD-R (Orange Book Part)</p> <p>CD-RW & HSRW (Orange Book Part Volume1 & Volume 2</p> <p>Super Audio CD (SACD) Hybrid type</p> <p>US & US+ RW</p> <p>DVD:</p> <p>DVD-ROM (Book 1.02), DVD-Dual</p> <p>DVD-Video (Book 1.1)</p> <p>DVD-R (Book 1.0, 3.9G)</p> <p>DVD-R (Book 2.0, 4.7G) - General & Authoring</p> <p>DVD+R (Version 1.0)</p> <p>DVD+RW</p> <p>DVD-RW (Non CPRM & CPRM)</p> <p>DVD^{DR}R Dual</p> <p style="text-align: right;">Blu-Ray: BD-R, BD-R DL, BD-RE, BD-RE DL</p> |
| Loading mechanism | <p>Load: Manual</p> <p>Release: (a) Electrical (Release Button), (b) ATAPI command, (c) Emergency</p> |
| Power Requirement | |
| Input Voltage | <p>5 V ± 5% (Operating)</p> <p>5 V ± 5% (Operating)</p> |

LCD

| Item | Specification |
|----------------------|---|
| Vendor | <ul style="list-style-type: none"> ▪ AUO ▪ CMI ▪ LG ▪ Samsung |
| Screen diagonal (mm) | 14 inches |

| Item | Specification |
|--------------------------------------|---|
| Resolution support (pixels) | <ul style="list-style-type: none"> ▪ 2560 x 1600 ▪ 1900x1200 ▪ 1366 x 768 ▪ 1360 x 768 ▪ 1280 x 768 ▪ 1280 x 720 ▪ 1024 x 768 ▪ 800 x 600 |
| Pixel pitch | 0.226 |
| Pixel arrangement | R.G.B. Vertical Stripe |
| Display mode | |
| Typical white luminance (brightness) | 220 nits |
| Luminance uniformity | 1.25 max. |
| Contrast ratio | 400:1, 500:1 or 650:1 |
| Response time (msec) | 8 |
| Nominal input voltage VDD | +3.3V |
| Viewing angle (degree) | |
| Horizontal: Right/Left | 45/45 |
| Vertical: Upper/Lower | 20/45 |
| Temperature range(° C) | |
| Operating | 0 to +50 |
| Storage (shipping) | -40 to +60 |

Keyboard

| Item | Specification |
|--|--|
| Keyboard controller | Nuvoton NPCE795P |
| Total number of keypads | 86/87/91-key |
| Windows logo key | Yes |
| Internal & external keyboard work simultaneously | Plug USB keyboard to the USB port directly |

Pointing device

| Item | Specification |
|---------|--|
| Type | <ul style="list-style-type: none"> ▪ Synaptics TM1465-001 Touchpad ▪ ALPS KGDF0508A Touchpad |
| Buttons | Left/Right |

Memory card reader

| Item | Specification |
|-----------------|---|
| Controller | Alcor AU6433 |
| Cards supported | Support 5-in-1 card reader (MMC, MS, MS-pro, SD, and xD) |
| Compliance | <ul style="list-style-type: none"> ▪ Complies to SDIO Host Interface Specification Rev 1.0 ▪ Supports MMC, MMCplus, SD Memory, and SDIO cards ▪ SDIO Version 1.10 compliant with High-Speed Mode ▪ SD Host Interface Specification v1.0 ▪ SD Host Interface Specification v2.0 ▪ SD HC (High Capacity SD memory card) ▪ Supports SD memory card, with CPRM security ▪ Complies to MultiMediaCard™ Version 4.0 ▪ Supports Memory Stick™ and MS PRO media cards ▪ Supports xD-Picture™ card and SmartMedia™ cards |

Audio

| Item | Specification |
|---------------------------|-----------------------------|
| Audio codec | Realtek ALC271X_VB3 |
| Audio onboard or optional | Built-in |
| Mono or stereo | Stereo |
| Resolution | 24-bit DAC and ADC |
| Compatibility | HD Audio |
| Sampling rate | 192 kHz maximum sample rate |
| Internal microphone | |
| Internal speaker/quantity | 2 speakers |

Wired LAN

| Item | Specification |
|------------------------|---|
| LAN chipset | Broadcom BCM57785X |
| Supports LAN protocol | 10/100/1000 Mbps |
| LAN connector type | RJ45 |
| LAN connector location | Left side |
| Features | <ul style="list-style-type: none"> ▪ Integrated 10/10/1000 BASE-T transceiver ▪ PCI v2.2 compliant ▪ Wake on LAN support meeting ACPI requirements |

Bluetooth

| Item | Specification |
|-----------------|--|
| Chipset | <ul style="list-style-type: none"> ▪ Foxconn Bluetooth ATH AR3011 ▪ Foxconn Bluetooth BRM 2046 BT 2.1 ▪ Foxconn Bluetooth BRM 2070 BT 2.1 ▪ Foxconn Bluetooth BRM 2046 BT3.0 ▪ Foxconn Bluetooth BRM 2070 BT 3.0 ▪ Foxconn Bluetooth ATH BU12 BT 3.0 |
| Data throughput | 2.1 Mbit/s |
| Protocol | Bluetooth 2.1/3.0 |
| Interface | USB (board level) |
| Connector type | Wireless via Bluetooth protocols |

Wireless LAN

| Item | Specification |
|-----------------|---|
| Chipset | <ul style="list-style-type: none"> ▪ Foxconn Wirelss LAN Atheros HB95BG (HM) T77H121.10 ▪ Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM) ▪ Foxconn Wireless LAN Broadcomm 43225 2x2 BGN (HM) T77H103.00 ▪ Liteon Wireless LAN Atheris HB97 2x2 BGN (HM) WN6603AH ▪ Liteon Wireless LAN Realtek 8192SE BGN WN6603LH (2x2 BGN) ▪ Lan Intel WLAN TBD Taylor Peak 2x2 AGN |
| Data throughput | 11~54 Mbps, up to 270 Mbps for Draft-N |
| Protocol | <ul style="list-style-type: none"> ▪ IEEE 802.11a ▪ IEEE 802.11b ▪ IEEE 802.11g |
| Interface | PCI bus (mini PCI socket for wireless module) |

USB

| Item | Specification |
|----------------------|---|
| Chipset | Mobile Intel HM65 Express Chipset |
| USB compliancy level | 2.0 |
| OHCI | USB 3.0 host controller |
| Number of USB ports | 3 |
| Location | <ul style="list-style-type: none"> ▪ One on the right side ▪ Two on the left side |

Buttons/Indicators/Ports

| Item | Specification |
|------------|---|
| Buttons | <ul style="list-style-type: none"> ▪ Power button |
| Indicators | <ul style="list-style-type: none"> ▪ Bluetooth/Wireless network ▪ Hard drive ▪ Battery charge ▪ Power |
| Ports | <ul style="list-style-type: none"> ▪ USB (three) ▪ External display (VGA) port ▪ Ethernet (RJ45) ▪ Headphone/SPDIF Audio Out ▪ Microphone in ▪ DC in jack for AC adapter ▪ 5-in-1 card reader (SD™, MMC, MS, MS PRO, xD) ▪ HDMI™ port with HDCP support |

Camera

| Item | Specification |
|------------|--|
| Model | Chicony 1.3M CH9665SN, CH_6A1_SP Liteon 1.3M LT9665AL/LT6AASP, LT6AASP(09P2BF127), LT_6A1_SP Suyin 1.3M SY9665SN, SY_6A1_SP |
| Interface | USB 2.0 |
| Resolution | 1.3 MP (1280 x800) |
| LED | |

Fans

| CPU temperature (° C) | Fan speed (rpm) | Acoustic level (dBA) |
|-----------------------|-----------------|----------------------|
| 45-50 | 0-3000 | 29 |
| 55-66 | 0-3300 | 33 |
| 68-74 | 3300-3800 | 38 |
| 78-83 | 3800-4100 | 40 |
| 86-91 | 4100-4800 | 40 |

Throttling 50%: % is controlled by operating system. Temperature point is 95 °C. OS shut down at 100 °C; H/W shut down at 105 °C

Battery

| Item | Specification |
|------------------------|--|
| Vendor | <ul style="list-style-type: none"> ▪ LGC ▪ Panasonic ▪ Samsung ▪ Sanyo ▪ Sony ▪ Simplo |
| Type | Li-ion |
| Pack capacity | 4400mAH |
| Number of battery cell | 6 |
| Package configuration | 3 cells in series, 2 series in parallel |
| Normal voltage | 11.1V |
| Charge voltage | 12.6V (max) |

Power supply

| Item | Specification |
|--------------------------|---|
| Vendor | <ul style="list-style-type: none"> ▪ Chicony ▪ Delta ▪ Liteon ▪ Hipro |
| Input rating | 90V AC to 264V AC, 47Hz to 63Hz |
| Maximum input AC current | 1.7A (max) |
| Output rating | 19V DC, 3.42A, 65W |

Power savings

| ACPI mode | Power Management |
|---------------------|--|
| Mech. Off (G3) | All devices in the notebook are turned off completely. |
| Soft Off (G2/S5) | OS initiated shutdown. All devices in the notebook are turned off completely. |
| Working (G0/S0) | Individual devices such as the CPU and hard disc may be power managed in this state. |
| Suspend to RAM (S3) | <ul style="list-style-type: none"> ▪ CPU set power down ▪ VGA suspend ▪ PCMCIA suspend ▪ Audio power down ▪ Hard drive power down ▪ Optical drive power down ▪ Super I/O low power mode |
| Save to Disk (S4) | Also called Hibernation mode. System saves all system states and data onto the disc prior to powering off the whole system. |

CHAPTER 2

System utilities

- BIOS setup utility
- BIOS recovery
- Clearing a BIOS password
- Unlocking the hard drive

BIOS setup utility

The BIOS setup utility is a hardware configuration program built into the notebook's BIOS (Basic Input/Output System). The notebook was shipped already properly configured and optimized. However, if the user encounters configuration problems, you may need to run Setup.

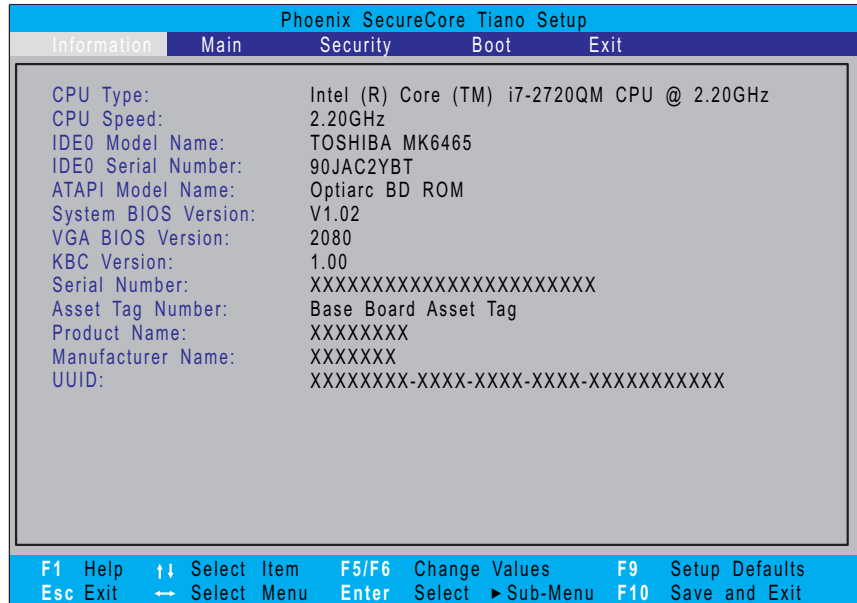
► To run the BIOS Setup Utility:

- 1 Turn on the notebook.

If the computer is already turned on, save your data and close all open applications, then restart the computer.

- 2 Press **F2** when the **Press <F2> to enter Setup** prompt appears on the bottom of the screen.

Use the left and right arrow keys to move between selections on the menu bar.




Navigating the BIOS setup utility

Use the keys listed in the legend bar on the bottom of the Setup screen to work your way through the various menu and submenu screens.

► To use the BIOS setup utility:

- To choose a menu, use the left ← and right → arrow keys.
- To choose an item, use the up ↑ and down ↓ arrow keys.
- To change the value of a parameter, press F5 or F6.
- A plus sign (+) indicates the item has sub-items. Press ENTER to expand this item.
- To load default settings, press F9.
- To save changes made and close the utility, press F10.

1 Press Esc while you are in any of the menu screen to display the Exit menu.


 **Important**

- You can change the value of a parameter if it is enclosed in square brackets.
 - Navigation keys for a particular menu are shown on the bottom of the screen. Help for parameters are found in the Item Specific Help part of the screen. Read this information carefully when making changes to parameter values.
 - The screenshots used in this section are for illustration only. The values displayed may not be the same as those in your computer.
-



BIOS setup utility menus

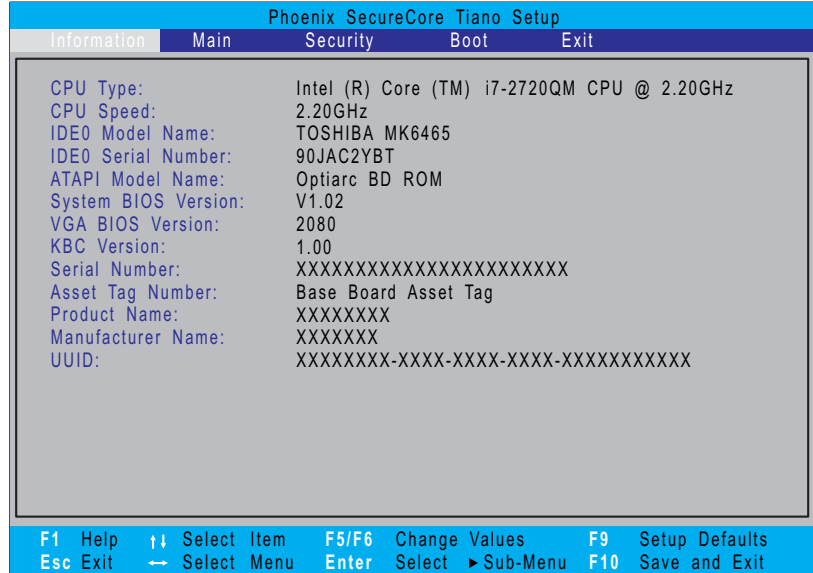
The Setup utility has five menus for configuring the various system functions. These include: Information, Main, Security, Boot, and Exit.

 **Important**

- The screenshots used in this section are for illustration only. The values displayed may not be the same as those in your computer. Actual screen information varies by model, installed features, and location.
 - In the descriptive table following each of the screenshot, settings in **boldface** are the default settings.
-

Information

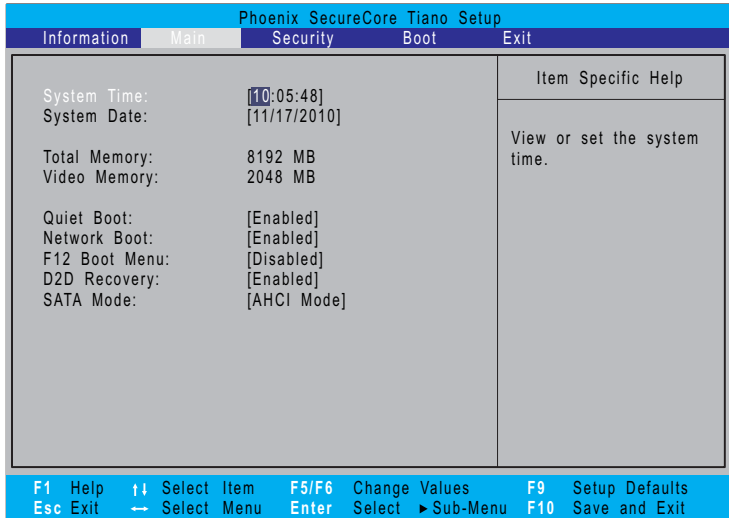
The Information menu displays a summary of your computer hardware information. These information are necessary for troubleshooting and may be required when asking for technical support.



| Parameter | Description |
|---------------------|--|
| CPU Type | Displays the processor model and speed. |
| CPU Speed | Displays the processor speed. |
| IDE0 Model Name | Displays the model name of the hard drive installed on the primary IDE master. |
| IDE0 Serial Number | Displays the serial number of the hard drive installed on the primary IDE master. |
| ATAPI Model Name | Displays the model name of the installed optical drive. |
| System BIOS Version | Displays system BIOS version. |
| VGA BIOS Version | Displays the VGA firmware version. |
| KBC Version | Displays the keyboard controller version. |
| Serial Number | Displays the system serial number. |
| Asset Tag Number | Displays the system asset tag number |
| Product Name | Displays the official model name of the computer. |
| Manufacturer Name | Displays the name of the computer manufacturer. |
| UUID | Displays the computer's UUID (universally unique identifier). UUID is an identifier standard used in software construction, standardized by the Open Software Foundation (OSF) as part of the Distributed Computing Environment (DCE). |

Main

Use the Main menu to set the system time and date, and other basic options.

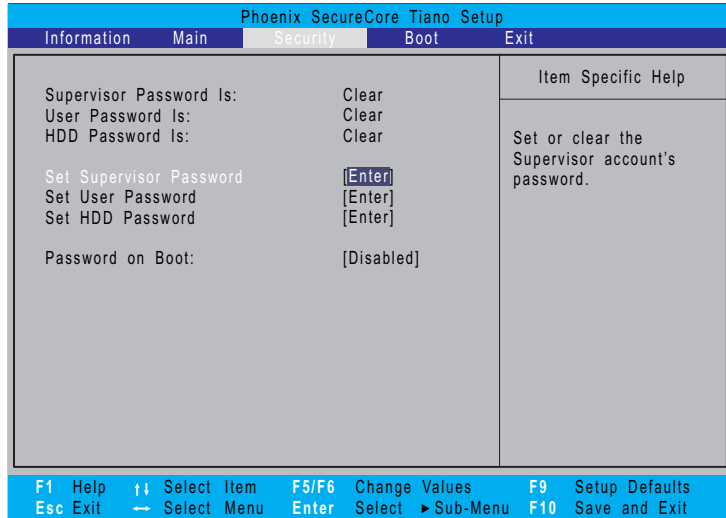


| Parameter | Description | Format/Options |
|---------------|---|----------------------------------|
| System Time | Displays the system time. The time is expressed in a 24-hour format. | HH:MM:SS (hour:minute:second) |
| System Date | Displays the system date. | MM/DD/YYYY (month/day/year) |
| Total Memory | Displays the size of system memory detected during boot-up. | |
| Video Memory | Displays the size of video memory detected during boot-up. | |
| Quiet Boot | <p>Enables or disables the Quiet Boot function.</p> <p>When enabled, BIOS setup is in graphical mode and displays only the computer brand logo during POST and while booting.</p> <p>When disabled, BIOS setup is in conventional text mode and displays the system Summary Screen.</p> | Disabled Enabled |
| Network Boot | When enabled, a remote host with appropriate boot image can boot this computer. (only works with an Ethernet device.) | Disabled Enabled |
| F12 Boot Menu | Enables or disables the Boot menu during POST. | Disabled Enabled |

| Parameter | Description | Format/Options |
|--------------|--|----------------------------|
| D2D Recovery | Enables or disables the D2D Recovery function. This function allows the user to create a hidden partition on the hard drive to store the operation system. User can then use this partition to restore the system to factory defaults by pressing the Alt+F10 keys during system boot-up. | Disabled Enabled |
| SATA Mode | Select the SATA controller operating mode. When set to AHCI (Advanced Host Controller Interface), the SATA controller enables its AHCI and RAID features when the computer boots up. When set to IDE, the SATA controller disables its AHCI and RAID functions when the computer boots up. Note: If you do not intend to use the AHCI or RAID features set this parameter to IDE to speed up the boot-up time. | AHCI Mode IDE |

Security

Use the Security menu option to set system passwords to protect your computer from unauthorized use.



| Parameter | Description | Option |
|------------------------|--|--------------|
| Supervisor Password Is | Displays the supervisor password status. | Clear Set |
| User Password Is | Displays the user password status. | Clear Set |
| HDD Password Is | Displays the hard drive password status. | Clear Set |

| Parameter | Description | Option |
|-------------------------|---|----------------------------|
| Set Supervisor Password | Press Enter to set a supervisor password. When set, this password will allow the user to access and change all settings in the Setup Utility. | |
| Set User Password | Press Enter to set a user password. When set, this password will restrict a user's access to the Setup menus. Only the following menus will be accessible: <ul style="list-style-type: none"> • System Time and System Date • All Exit menu options excluding Load Setup Defaults Note: A supervisor password must first be set before creating a user password. If Password on Boot is enabled, the user must enter the user password each time the notebook is turned on or wakes from Sleep. | |
| Set HDD Password | Press Enter to set password for accessing the hard disk drive (HDD) password. It will be required during boot-up or when waking from hibernation mode. | |
| Password on Boot | Referred to as the power-on password. When enabled, the user or supervisor password will be required to boot up the system. Note: A supervisor password must first be set before creating a user password. | Disabled Enabled |

Caution

When you are prompted to enter a password, you have three tries before the system halts. Don't forget your password.

Setting a password

Note the following reminders before you define a system password:

- The maximum length of password contains 8 alphanumeric characters.
- System passwords are case-insensitive.
- When typing the password, only shaded blocks representing each typed character are visible.

► To set a supervisor password:

- 1 Press ↑ or ↓ to highlight Set Supervisor Password, then press Enter. The *Set Supervisor Password* box opens.



- 2 Type a password, then press Enter.

- 3 Retype the password to verify the first entry, then press Enter.
You will be prompted to save the new password.
- 4 Press Enter.
- 5 Press F10 to save the password and close the Setup Utility or you can proceed to setting a user password.



▶ To set a user password:

- 1 Press ↑ or ↓ to highlight Set User Password, then press Enter.
The *Set User Password* box opens.
- 2 Type a password, then press Enter.
- 3 Retype the password to verify the first entry, then press Enter.
You will be prompted to save the new password.
- 4 Press Enter.
- 5 Press F10 to save the password and close the Setup Utility.



Changing a password

▶ To change a password:

- 1 Press ↑ or ↓ to highlight the Set Supervisor Password or Set User Password field, then press Enter.
The *Set Supervisor Password* or *Set User Password* box opens.



- 2 Type the current password, then press Enter.
- 3 Type a new password, then press Enter.
- 4 Retype the new password to verify the first entry, then press Enter.
You will be prompted to save the new password.
- 5 Press Enter.
- 6 Press F10 to save the password and close the Setup Utility or you can proceed to setting a user password.



Removing a password

► To remove a password:

- 1 Press \uparrow or \downarrow to highlight the Set Supervisor Password or Set User Password field, then press Enter.

The *Set Supervisor Password* or *Set User Password* box opens.



- 2 Type the current password, then press Enter.
- 3 Press Enter twice without entering anything in the new and confirm password fields.
You will be prompted to confirm the password removal.
- 4 Press Enter.
- 5 Press F10 to save the password and close the Setup Utility or you can proceed to setting a user password.



Resetting a password

If you have forgotten the user password, the computer will continue to function normally but you will have limited access to the Setup utility.

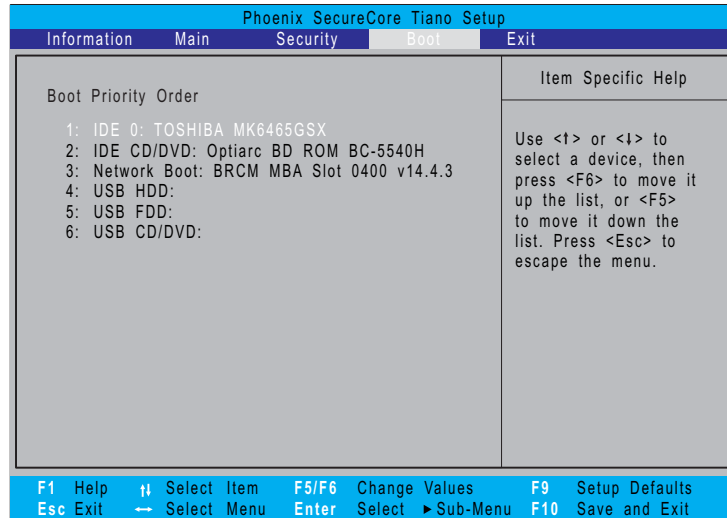
If you have enabled the Password on Boot field and you forget the supervisor password, you will not be able to boot up the computer. The same thing applies if you forget the HDD password.

To clear a lost BIOS password (user or supervisor password) you need to short the clear password hardware gap located on the system board. Go to [page 30](#) for instructions.

To regain access to your computer if you lose the HDD password, you need to generate a master password and unlock your hard drive. Go to [page 31](#) for instructions.

Boot

Use the Boot menu to set the preferred drive sequence in which the Setup utility attempts to boot the operating system.



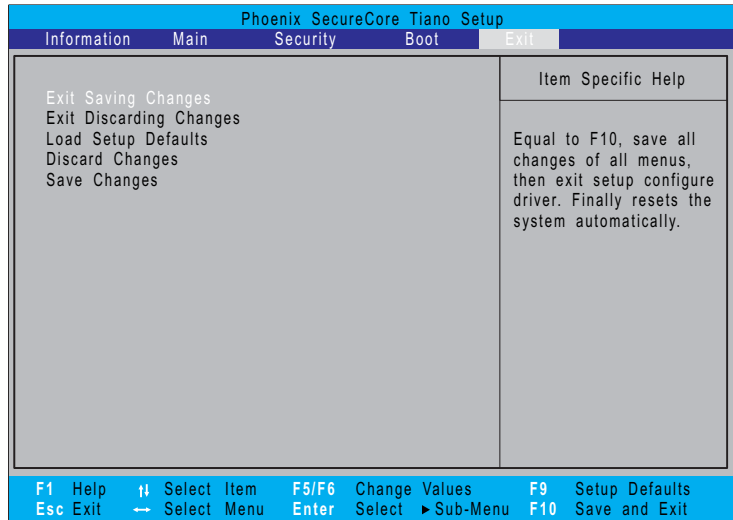
► To set boot drive sequence:

- 1 Press ↑ or ↓ to highlight a bootable device.
- 2 Press F5 or F6 to move the selected device up or down the boot sequence.
- 3 Press F10 to save the changes you made and close the Setup utility.

■

Exit

The Exit menu screen lists options for quitting from the Setup Utility.



| Option | Description |
|-------------------------|---|
| Exit Saving Changes | Saves changes made and closes the Setup utility. Keyboard shortcut: F10 |
| Exit Discarding Changes | Discards changes made and closes the Setup utility. |
| Load Setup Defaults | Loads the factory-default settings for all Setup parameters. Keyboard shortcut: F9 |
| Discard Changes | Discards all changes made to the Setup utility and loads previous configuration settings. |
| Save Changes | Saves all changes made to the Setup utility. |

BIOS recovery

An interruption during a BIOS flash procedure (e.g. a power outage) can corrupt the BIOS code, which will cause the system to go into an unbootable state. You need to access and execute the boot block program to reboot the computer and recover the regular BIOS code.



Caution

Observe the following when performing a BIOS recovery:

- Make sure the battery pack is installed to the system and that the computer is connected to a UPS unit during the BIOS recovery and BIOS flash procedures.
- The BIOS crisis recovery disk should be prepared in a computer running the Windows XP or Windows Vista OS.

Creating the Crisis Recovery disk

► To create the Crisis Recovery disk:

- 1 Prepare a removable USB storage device with a capacity size greater than 10 MB.

Note that all data on the USB storage device will be cleared during the creation of the crisis disk.

- 2 Set up a computer running the Windows XP or Windows Vista OS and plug in the USB storage device into an available USB port.
- 3 Use the text editor to create a file named startup.nsh with the following contents.

fs0:

PFlash.efi/bb1/silent/sv/sd JV40009j.fd (where JV40009j.fd is the new BIOS image file)

- 4 Copy the startup.nsh file and the following folder and files to the USB storage device.
 - EFI folder
 - BIOS.cap
 - PFlash.efi
 - CrisisRecovery.efi
 - BIOS image file
- 5 Eject and reconnect the USB storage device, and make sure the files are saved to the device.



Performing a BIOS recovery

► To perform a BIOS recovery:

- 1 Shut down the BIOS failed-computer.
- 2 Connect the USB storage device containing the Crisis Recovery disk files to the failed computer.
- 3 Press and hold the Fn+Esc keys (this is the BIOS recovery hotkey), then press the power button.

The BIOS recovery process begins. When the process is complete the computer will automatically reboot.

- 4 Disconnect the USB storage device from the computer.
- 5 Perform a BIOS flash procedure to update the BIOS firmware.



Running the Flash utility:

- ▶ To run the Flash utility:
 - 1 Rename the BIOS file as "XXXXXXX.FD".
 - 2 Copy the "XXXXXXX.FD" file to a bootable USB device containing the Crisis Recovery disk files.
 - 3 Turn off the computer.
 - 4 Insert the USB device containing the renamed BIOS file and the Crisis Recovery disk files to any USB port.
 - 5 Press and hold the Fn+Esc keys (this is the BIOS recovery hotkey), then press the power button.
 - 6 Release the Fn+Esc keys after POST.



Clearing a BIOS password

To clear a lost BIOS password (user or supervisor password) you need to short the clear password hardware gap (G2201) located on the system board.



| Gap | Default setting | Function |
|-------|-----------------|---|
| G2201 | Open (normal) | Short to clear the user and supervisor passwords. |

► To clear a BIOS password:

- 1 Turn off the notebook and unplug all the peripherals connected to it.
- 2 Complete the steps in [“Removing the battery” on page 38](#).
- 3 Complete the steps in [“Removing the bay cover” on page 39](#).
- 4 Remove the wireless card by performing [steps 3 – 7](#) of the [“Replacing the wireless card” on page 43](#).
- 5 Locate the G2201 gap.
- 6 Use an electrical conductivity tool to short the two contacts on the hardware gap together.
- 7 While resting the tool on the two contacts, plug one end of the AC adapter into the DC power jack and plug one end to an electrical outlet.
- 8 Press the power button to turn on the system.
- 9 After the POST, remove the tool from the hardware gap.
- 10 Reinstall the battery pack, and the bay cover.
- 11 Turn on the notebook and press F2 during bootup to access the Setup utility.
- 12 Press F9 to load the system defaults.
- 13 Press F10 to save the changes you made and close the Setup utility.



Unlocking the hard drive

To regain access to your computer if you lose the HDD password, you need to generate a master password and unlock the hard drive.

► To unlock a hard drive:

- 1 Open the computer in a DOS environment.
- 2 Type the following command:
A\> unlock6 XXXXX 00 (where XXXXX is the HDD password error code)
- 3 Press Enter to display the command options.
- 4 Select option 2 (upper case ASCII code), then press Enter.
- 5 Write down the generated master password.
- 6 Reboot the computer.
- 7 In the HDD password prompt, type the master password generated in [step 5](#), then press Enter.



CHAPTER 3

Replacing notebook components

- Preventing static electricity discharge
- Preparing the work space
- Required tools
- Preparing the notebook
- Removing the battery
- Replacing the hard drive
- Replacing the wireless card
- Adding or replacing memory modules
- Replacing the optical drive
- Replacing the palm rest module
- Replacing the touchpad board
- Replacing the keyboard
- Replacing the speakers
- Replacing the power button board
- Replacing the USB board
- Replacing the Bluetooth module
- Replacing the system board
- Replacing the cooling assembly
- Replacing the processor
- Replacing the LCD panel assembly
- Replacing the LCD front panel
- Replacing the webcam
- Replacing the LCD panel
- Replacing the LCD panel hinge brackets
- Replacing the microphone
- Replacing the antennas
- Replacing the LCD assembly lid

Preventing static electricity discharge



Warning

To avoid exposure to dangerous electrical voltages and moving parts, turn off your notebook, remove the battery, and unplug the power cord and network cable before opening the case.



Warning

To prevent risk of electric shock, do not insert any object into the vent holes of the notebook.



Important

Before performing maintenance on the notebook, you should read and understand the information in this section.

The components inside your notebook are extremely sensitive to static electricity, also known as *electrostatic discharge* (ESD).

Before performing maintenance on the notebook, follow these guidelines:

- Avoid static-causing surfaces such as carpeted floors, plastic, and packing foam.
- Remove components from their antistatic bags only when you are ready to use them. Do not lay components on the outside of antistatic bags because only the inside of the bags provide electrostatic protection.
- Always hold components by their edges. Avoid touching the edge connectors. Never slide components over any surface.
- Wear a grounding wrist strap (available at most electronics stores) and attach it to a bare metal part of your workbench or other grounded connection.
- Touch a bare metal surface on your workbench or other grounded object.

Tape

Some of the procedures in this guide involve removing tape that secures cables or components. Two types of tape are used in this notebook:

- Mylar, non-conductive tape is typically transparent, with a red or brown tint.
- Conductive tape is typically grey or silver in color.

If the existing tape cannot be reused, replace it with the same type. Make sure the replacement tape is of the non-ESD generating kind. Do not use cellophane tape.

Preparing the work space

Before performing maintenance on the notebook, make sure that your work space and the notebook are correctly prepared.

- Wear a grounding (ESD) wrist strap, and use a grounded or dissipative work mat.
- Use a sturdy table. Make sure that the table top is wide enough to hold each component as you remove it.
- Ensure that clear lighting condition is available to make part identification easier.
- Keep your work surface free from clutter and debris that may damage components.
- Use a magnetized screwdriver for removing screws.
- When removing components that are attached to the notebook by a cable, unplug the cable before removing the screws, when possible, to avoid damaging the cable.
- As you remove components and screws, lay them toward the rear of your work surface (behind the notebook) or far enough to the side that your arms will not accidentally brush them onto the floor.
- To help keep track of screws, try the following:
 - Place each component's screws in their own section of a parts sorter.
 - Place each component's screws next to the component on your work surface.
 - Print the first page of each task, then place the page toward the rear of your work surface. As you remove screws, place the screws in their respective section on the page.
 - After loosening screws that are deeply recessed in a hole (for example, on the bottom of the base assembly), you can leave the screws in the holes if you place small pieces of masking tape over the hole openings. When reassembling the component, just remove the tape and tighten the screws.
 - When you place flat-headed screws on the work surface, stand them on their heads to prevent the screws from rolling off the table.

Required tools

To disassemble the notebook, you need the following tools:

- Wrist grounding strap (for ESD prevention)



- Conductive mat (for ESD prevention)
- Flat screwdriver



- Phillips screwdriver



- Non-marring plastic scribe



Preparing the notebook

- ▶ To prepare the notebook for maintenance:
 - 1 Make sure that the optical disc drive is empty.
 - 2 Turn off the notebook.
 - 3 Close the LCD panel.
 - 4 Disconnect the AC adapter.



- 5 Disconnect the network cable and all peripheral devices connected to the notebook.
- 6 Make sure there is no memory card on the card reader slot. To remove a memory card:
 - a Push against the card, as if you were pushing it further into the slot, letting the card spring out
 - b Pull the memory card out of its slot.

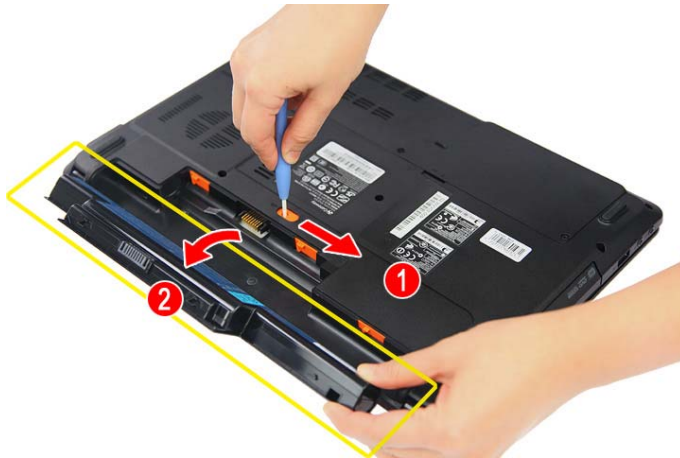


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Removing the battery

► To remove the battery:

- 1 Turn the notebook over so the base is facing up.
- 2 Slide the battery release latch.
- 3 Remove the battery out of the notebook.



Note

The battery is highlighted with a yellow rectangle in the above image. Follow local regulations for battery disposal.



Removing the bay cover

To remove or replace components located on the lower bay, you need to remove the bay cover first.

Tools you need to complete this task:




Phillips #0 screwdriver



Non-marring plastic scribe

Screws removed during this task:

-  3 black M2.5x6 (bay cover)

► To remove the bay cover:

- 1 Complete the steps in [“Preparing the notebook” on page 37](#).
- 2 Turn the notebook over so the base is facing up.
- 3 Remove the bay cover screws.



- 4 Insert a non-marring plastic scribe on the cover's notch to release the cover from the computer, and then remove the cover.






Replacing the hard drive

Tools you need to complete this task:



Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  2 chrome M3x4 (hard drive bracket)

► To replace the hard drive:

- 1 Complete the steps in [“Preparing the notebook”](#) on page 37.
- 2 Complete the steps in [“Removing the bay cover”](#) on page 39.
- 3 Remove the hard drive screw.



- 4 Grasp the black mylar tab and use it to disengage the hard drive from its connector, and then remove the drive from its compartment.



- 5 If your new hard drive already includes the hard drive bracket, go to [step 8](#). If you need to use the bracket from the old hard drive, go to [step 6](#).
- 6 Remove the screws that secure the hard drive bracket, and then detach the drive from the bracket.



- 7 Place the bracket on the new drive and secure it with the two screws removed in [step 6](#).
- 8 Slide the new hard drive into the hard drive compartment and make sure it's properly engaged to the SATA1 connector.
- 9 Secure the new drive to the base with the screw removed in [step 6](#).
- 10 Reinstall the bay cover.



Replacing the wireless card

Tools you need to complete this task:





Phillips #0 screwdriver



Non-marring plastic scribe

Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (wireless card)

► To replace the wireless card:

- 1 Complete the steps in [“Preparing the notebook” on page 37](#).
- 2 Complete the steps in [“Removing the bay cover” on page 39](#).
- 3 Detach the barcode sticker.
- 4 Unplug the antenna cables. Note which color cable corresponds to each of the connectors.



Important

The number of antenna cables varies depending on the type of wireless card installed on the notebook. IEEE 802.11n cards typically have three antenna cables. Other types of wireless cards usually have only two antenna cables.



- 5 Move the antenna cables away from the wireless card screw.

- 6 Remove the screw securing the wireless card.



- 7 Pull the card out of the slot.



- 8 Insert the new wireless card at a 30° angle into the empty Mini Card slot. The card is keyed so it can only be inserted in one direction. If the card does not fit, make sure that the notch in the card lines up with the tab in the card slot.
- 9 Secure the new wireless card with the screw removed in [step 6](#).
- 10 Reconnect the antenna cables to the connectors.
- 11 Reinstall the bay cover.



Adding or replacing memory modules

✓ Important

Use only memory modules designed for this notebook.

Tools you need to complete this task:



Screws removed during this task:

- 3 black M2.5x6 (bay cover)
- To add or replace memory modules:
- 1 Complete the steps in [“Preparing the notebook”](#) on page 37.
 - 2 Complete the steps in [“Removing the bay cover”](#) on page 39.
 - 3 If you are replacing a memory module, go to [step 4](#).
If you installing an additional memory module, go to [step 5](#).
 - 4 Use a non-marring plastic scribe to push out the latches on both sides of the memory slot until the module tilts upward (1), and then remove the memory module from its slot (2).



- 5 Insert the new memory module at a 30° angle into an empty memory slot, and then press it down until it clicks into place.
The module is keyed so it can only be inserted in one direction. If the module does not fit, make sure that the notch in the module lines up with the tab in the memory slot.
- 6 Reinstall the bay cover.



Replacing the optical drive

Tools you need to complete this task:





Phillips #0 screwdriver



Non-marring plastic scribe

Screws removed during this task:

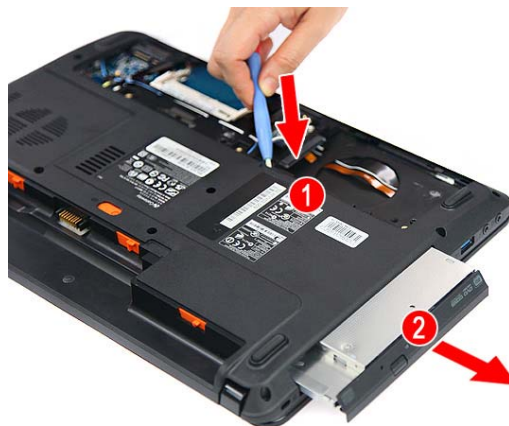
-  1 black M2.5x6 (optical drive)
-  1 black M2x3 (optical drive bracket)

► To replace the optical drive:

- 1 Complete the steps in [“Preparing the notebook”](#) on page 37.
- 2 Complete the steps in [“Removing the battery”](#) on page 38.
- 3 Remove the optical drive screw.



- 4 Use the non-marring plastic scribe to carefully push the optical drive out of the drive bay (1), and then slide the drive out (2).



- 5 If your new optical drive already has its own bracket and bezel, go to [step 10](#). If you need to use the bezel and bracket from the old optical drive, perform [steps 6 – 9](#) as necessary.
- 6 Detach the bezel from the old optical drive.



- 7 Remove the screw that secures the optical drive bracket, and then detach the bracket from the drive.



- 8 Attach the bezel to the new optical drive.
- 9 Attach the bracket to the new optical drive and secure it with the screw removed in [step 7](#).
- 10 Slide the new optical drive into the drive bay and make sure it's properly engaged to the ODD1 connector.
- 11 Secure the new drive to the system board with the screw removed in [step 3](#).
- 12 Reinstall the battery.



Replacing the palm rest module

Tools you need to complete this task:



Phillips #0 screwdriver



Flat screwdriver

or



Non-marring plastic scribe

Screws removed during this task:

- 3 black M2.5x6 (bay cover)
- 1 black M2x3 (hard drive)
- 1 black M2.5x6 (optical drive)
- 9 black M2.5x6 (palm rest - base side)

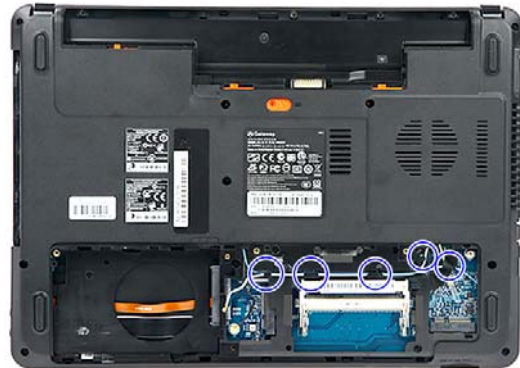
► To replace the palm rest:

- 1 Complete the steps in [“Preparing the notebook”](#) on page 37.
- 2 Complete the steps in [“Removing the battery”](#) on page 38.
- 3 Complete the steps in [“Removing the bay cover”](#) on page 39.
- 4 Remove the hard drive screw, and then remove the hard drive from its compartment.



- 5 If the notebook has a wireless card installed, unplug the antenna cables.

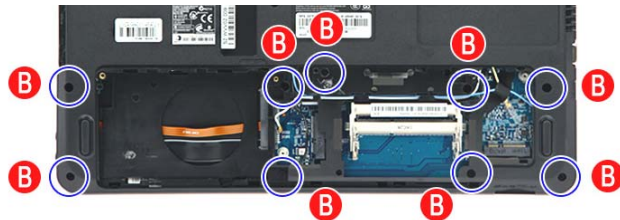
- 6 Release the antenna cables from its latches.



- 7 Remove the optical drive screw, and then remove the optical drive.



- 8 Remove the screws securing the palm rest on the base side.



- 9 Locate the small gaps on the bottom side of the palm rest and insert a small flat-blade screwdriver or non-marring scribe into each gap to separate the palm rest from the base enclosure.
- 10 Once the bottom side is separated, pry loose the left and right sides of the palm rest, until all the palm rest retaining tabs have been released.
- 11 Flip the palm rest module over **(1)** .
- 12 Unlock the touchpad cable connector **(2)** and remove the touchpad cable **(3)**.
- 13 Lift the palm rest module from the base enclosure **(4)**.

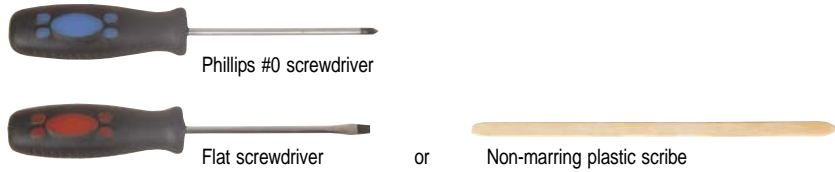


- 14 Reconnect the touchpad cable to its system board connector.
- 15 Place the new palm rest assembly on top of the base enclosure and press it down on all sides until it snaps into place.
- 16 Close the LCD panel and turn the notebook over so the base is facing up.
- 17 Secure the palm rest assembly with the screws removed in [step 8](#).
- 18 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 19 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 20 If you have disconnected any wireless antennas, reconnect them now.
- 21 Reinstall the bay cover.
- 22 Reinstall the battery.



Replacing the touchpad board

Tools you need to complete this task:



Screws removed during this task:

- 3 black M2.5×6 (bay cover)
- 1 black M2×3 (hard drive)
- 1 black M2.5×6 (optical drive)
- 9 black M2.5×6 (palm rest - base side) - Indicated by A in [step 8](#) of the [“Replacing the palm rest module”](#) procedure on [page 48](#)

► To replace the touchpad board:

- 1 Complete the steps in [“Preparing the notebook”](#) on [page 37](#).
- 2 Complete the steps in [“Removing the battery”](#) on [page 38](#).
- 3 Remove the hard drive by performing [steps 3](#) and [4](#) of the [“Replacing the hard drive”](#) procedure on [page 41](#).
- 4 Remove the optical drive by performing [steps 3](#) and [4](#) of the [“Replacing the optical drive”](#) procedure on [page 46](#).
- 5 Remove the palm rest by performing [steps 8 – 13](#) of the [“Replacing the palm rest module”](#) procedure on [page 48](#).
- 6 Note the orientation of the touchpad board for later reference in installing the new touchpad board.
- 7 Insert a small flat-blade screwdriver or non-marring scribe between the touchpad board and the palm rest’s underside, and carefully pry the board loose.
- 8 Remove the touchpad board from the palm rest.





Note

A circuit board that is $>10 \text{ cm}^2$ has been highlighted with a yellow rectangle as shown in the above image. Follow the local regulations for disposing this type of circuit board.

- 9 Observing the same orientation as the old touchpad board, secure the new board on the palm rest.
- 10 Cover the new touchpad board with the double-sided tape.
- 11 Insert the touchpad cable to the touchpad board cable connector, and then close the clip to lock the cable in place.
- 12 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 13 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 14 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 15 If you have disconnected any wireless antennas, reconnect them now.
- 16 Reinstall the bay cover.
- 17 Reinstall the battery.

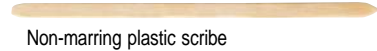


Replacing the keyboard













































Tools you need to complete this task:



or



Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#))
-               13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#))
-             12 black M2x2 (keyboard frame) - indicated by A in [step 16](#))
-           10 black M1.4x3 (keyboard frame) - indicated by B in [step 16](#))

► To replace the keyboard:

- 1 Complete the steps in [“Preparing the notebook” on page 37.](#)



Caution

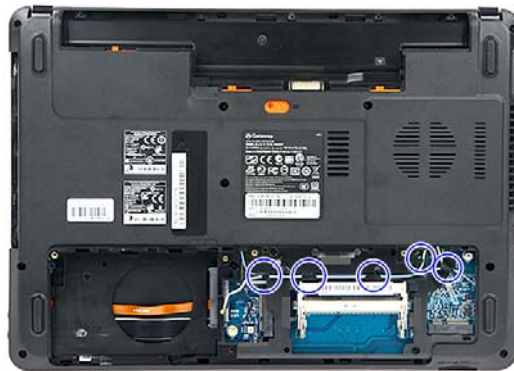
The keyboard is connected to the notebook through the keyboard cable. Disconnect this cable first before pulling the keyboard away from the palm rest.

- 2 Complete the steps in [“Removing the battery” on page 38.](#)
- 3 Complete the steps in [“Removing the bay cover” on page 39.](#)

- 4 Remove the hard drive screw, and then remove the hard drive from its compartment.



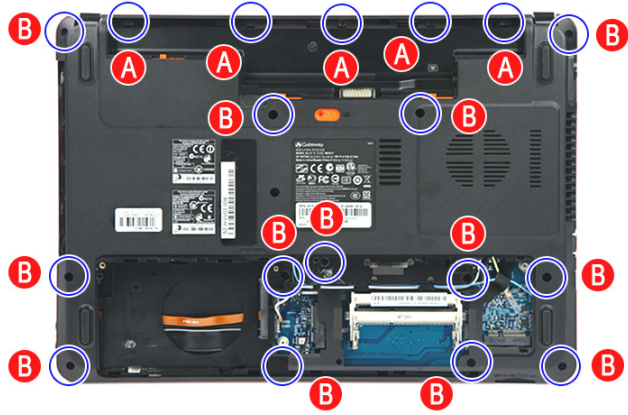
- 5 If the notebook has a wireless card installed, unplug the antenna cables.
- 6 Release the antenna cables from the latches securing them.



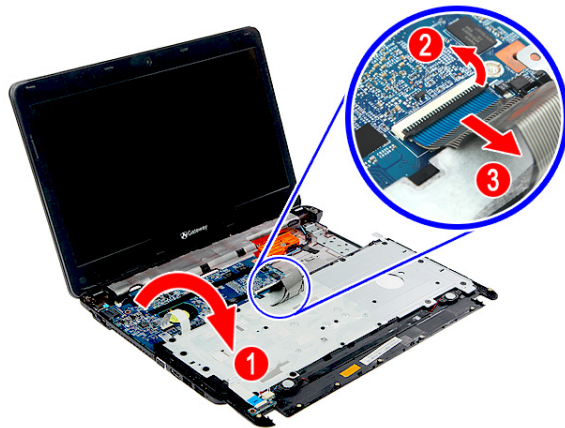
- 7 Remove the optical drive screw, and then remove the optical drive.



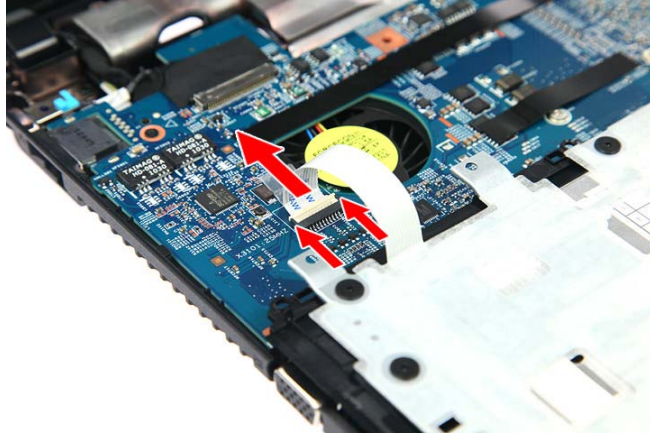
- 8 Remove the screws securing the palm rest and keyboard frame to the base side.



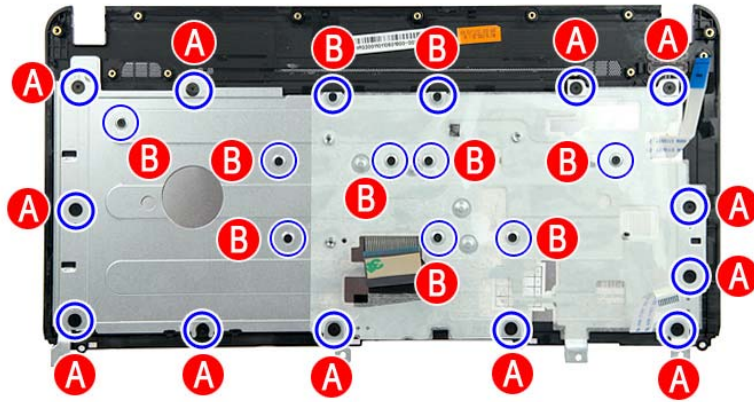
- 9 Remove the palm rest by performing [steps 9 – 13](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 10 Locate the small gaps on the top side of the keyboard frame and insert a small flat-blade screwdriver or non-marring scribe into each gap to separate the keyboard frame from the base enclosure.
- 11 Once the top side is separated, pry loose the left and right sides of the keyboard frame, until all the retaining tabs have been released.
- 12 Flip the keyboard over to access to the keyboard cable **(1)**.
- 13 Unlock the system board’s keyboard cable connector **(2)**, and then remove the cable **(3)**.



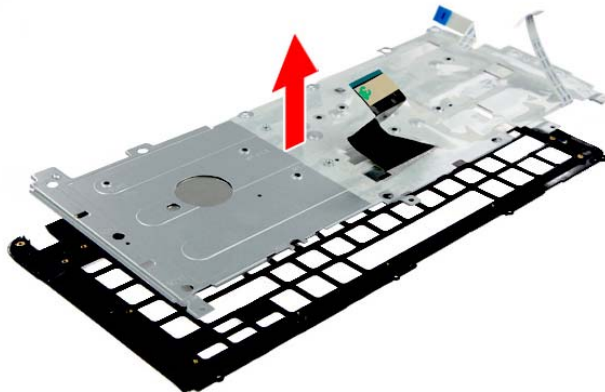
- 14 Unlock the system board's power button board cable connector, and then remove the cable.



- 15 Lay the keyboard frame down.
- 16 Remove the screws securing the keyboard.



- 17 Lift the keyboard from the frame.



- 18 If your new keyboard already includes the keyboard frame, go to [step 21](#). If you need to use the keyboard frame from the old keyboard, go to [step 19](#).
- 19 Position the new keyboard on the keyboard frame.
- 20 Secure the keyboard with the screws removed in [step 16](#).
- 21 Lay the keyboard down and insert the keyboard cable to its system board connector, and then close the clip to lock the cable in place.



Important

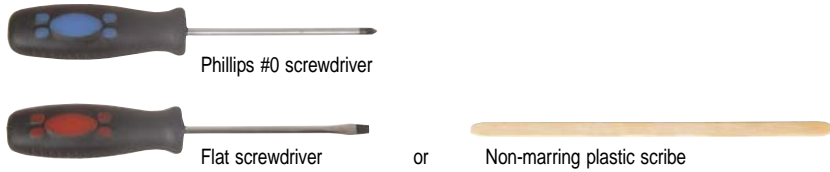
The keyboard cable is correctly oriented if it is not twisted.

- 22 Flip the keyboard over and press it down on all sides until it snaps into place.
- 23 Close the LCD panel and turn the notebook over so the base is facing up.
- 24 Secure the keyboard frame with the screws removed in [step 8](#).
- 25 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 26 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 27 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 28 If you have disconnected any wireless antennas, reconnect them now.
- 29 Reinstall the bay cover.
- 30 Reinstall the battery.





























Replacing the speakers

Tools you need to complete this task:



Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-               13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-     4 black M2x3 (speakers)

► To replace the speakers:

- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the hard drive by performing [steps 3 and 4](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 3 Remove the optical drive by performing [steps 3 and 4](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 4 Remove the palm rest by performing [steps 8 – 13](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 5 Remove the keyboard by performing [steps 10 – 14](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).

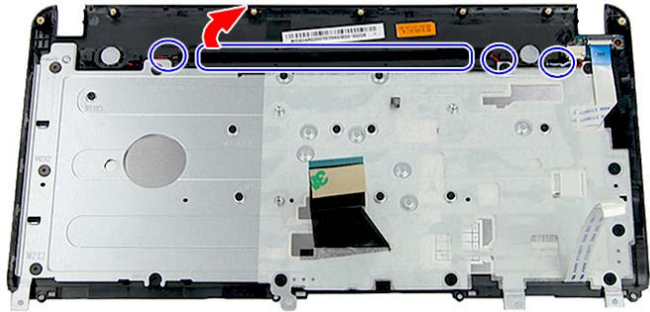


Caution

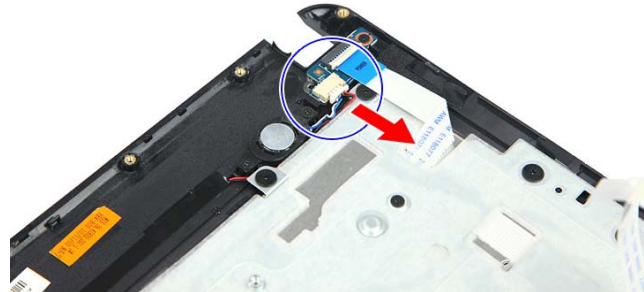
The keyboard is connected to the notebook through a keyboard cable. Disconnect this cable first before pulling the keyboard away from the palm rest assembly.

- 6 Lay the keyboard frame keys down.

- 7 Detach the mylar tape covering the speaker cable, and then release the speaker cable from the latches securing the cable.



- 8 Disconnect the speaker cable from the power button board.



- 9 Remove the speaker screws, and then remove the speakers.



- 10 Position the new speakers on the keyboard frame.
- 11 Secure the speakers with the screws removed in [step 9](#).
- 12 Reconnect the speaker cable to the power button board.
- 13 Secure the speaker cable on the keyboard frame latches.
- 14 Cover the speaker cable with mylar tape.
- 15 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 16 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 17 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 18 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).

CHAPTER 3: Replacing notebook components

- 19 If you have disconnected any wireless antennas, reconnect them now.
- 20 Reinstall the bay cover.
- 21 Reinstall the battery.

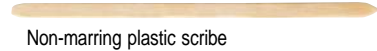


Replacing the power button board























Tools you need to complete this task:



or



Screws removed during this task:

-  3 black M2.5×6 (bay cover)
-  1 black M2×3 (hard drive)
-  1 black M2.5×6 (optical drive)
-      5 black M2×3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-              13 black M2.5×6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-  2 black M2×3 (power button board)

► To replace the power button board:

- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Complete the steps in “[Removing the battery](#)” on [page 38](#).
- 3 Remove the hard drive by performing steps 3 and 4 of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 4 Remove the optical drive by performing steps 3 and 4 of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 5 Remove the palm rest by performing [steps 8 – 13](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 6 Remove the keyboard by performing [steps 10 – 14](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).



Caution

The keyboard is connected to the notebook through a keyboard cable. Disconnect this cable first before pulling the keyboard away from the palm rest assembly.

- 7 Lay the keyboard frame keys down.

- 8 Disconnect the speaker cable from the power board.
- 9 Unlock the power button board cable connector (1), and then remove the cable (2).



- 10 Remove the power button board screw, and then remove the old power button board from the keyboard frame.



- 11 Position the new power button board on the keyboard frame.
- 12 Secure the power button board with the screw removed in [step 10](#).
- 13 Insert the power button cable to the power button board cable connector, and then close the clip to lock the cable in place.
- 14 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 15 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 16 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 17 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 18 If you have disconnected any wireless antennas, reconnect them now.
- 19 Reinstall the bay cover.
- 20 Reinstall the battery.

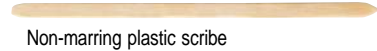


Replacing the USB board

Tools you need to complete this task:



or

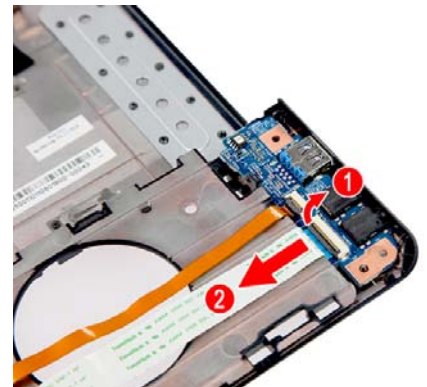
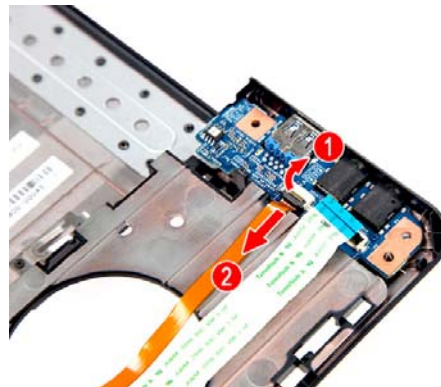


Screws removed during this task:

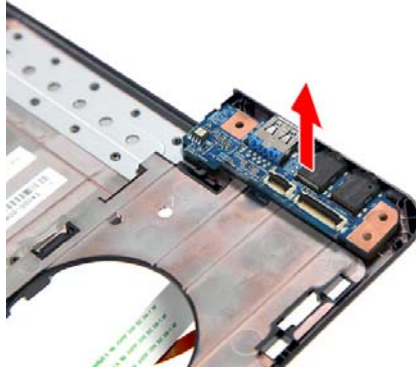
- 3 black M2.5×6 (bay cover)
- 1 black M2×3 (hard drive)
- 1 black M2.5×6 (optical drive)
- 9 black M2.5×6 (palm rest - base side) - Indicated by A in [step 8](#) of the [“Replacing the palm rest module”](#) procedure on [page 48](#)

► To replace the USB board:

- 1 Complete the steps in [“Preparing the notebook”](#) on [page 37](#).
- 2 Complete the steps in [“Removing the battery”](#) on [page 38](#).
- 3 Remove the hard drive by performing [steps 3 and 4](#) of the [“Replacing the hard drive”](#) procedure on [page 41](#).
- 4 Remove the optical drive by performing [steps 3 and 4](#) of the [“Replacing the optical drive”](#) procedure on [page 46](#).
- 5 Remove the palm rest by performing [steps 8 – 13](#) of the [“Replacing the palm rest module”](#) procedure on [page 48](#).
- 6 Unlock the two USB board cable connectors (1), and then remove the USB board cables (2).



- 7 Remove the USB board from the tabs securing it.

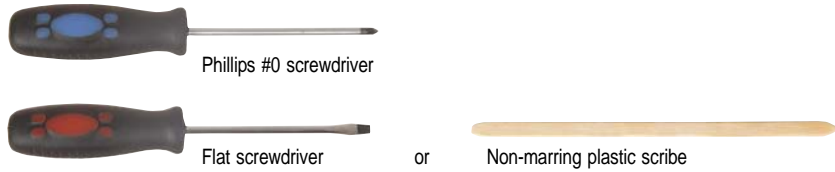


- 8 Place the new USB board in the base enclosure.
- 9 Reconnect the two USB board cables to the new USB board.
- 10 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 11 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 12 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 13 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 14 If you have disconnected any wireless antennas, reconnect them now.
- 15 Reinstall the bay cover.
- 16 Reinstall the battery.



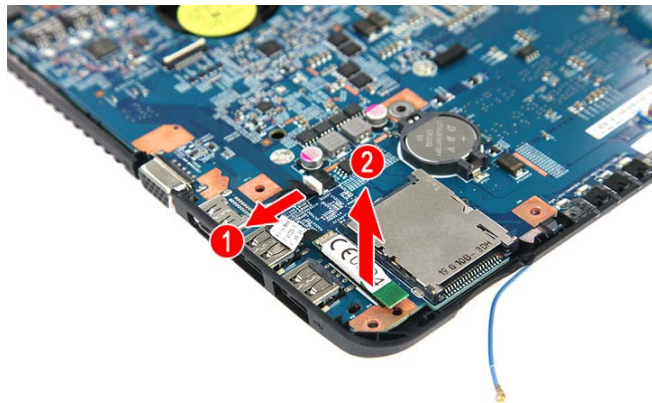
Replacing the Bluetooth module

Tools you need to complete this task:



Screws removed during this task:

- 3 black M2.5×6 (bay cover)
 - 1 black M2×3 (hard drive)
 - 1 black M2.5×6 (optical drive)
 - 9 black M2.5×6 (palm rest - base side) - Indicated by A in [step 8](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#)
- To replace the Bluetooth module:
- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
 - 2 Complete the steps in “[Removing the battery](#)” on [page 38](#).
 - 3 Remove the hard drive by performing [steps 3 and 4](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
 - 4 Remove the optical drive by performing [steps 3 and 4](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
 - 5 Remove the palm rest by performing [steps 8 – 13](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
 - 6 Disconnect the Bluetooth cable from its system board connector (1), and then detach the Bluetooth module (2).



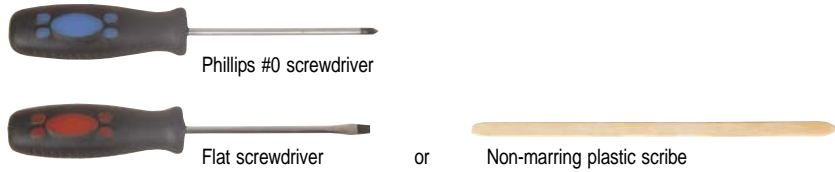
- 7 Place the new Bluetooth module on the system board and reconnect the Bluetooth cable to its system board connector.
- 8 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).

- 9 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 10 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 11 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 12 If you have disconnected any wireless antennas, reconnect them now.
- 13 Reinstall the bay cover.
- 14 Reinstall the battery.

























Replacing the system board

Tools you need to complete this task:



Screws removed during this task:

-  3 black M2.5×6 (bay cover)
-  1 black M2×3 (hard drive)
-  1 black M2.5×6 (optical drive)
-      5 black M2×3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-              13 black M2.5×6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-  1 black M2×3 (system board)

► To replace the system board:

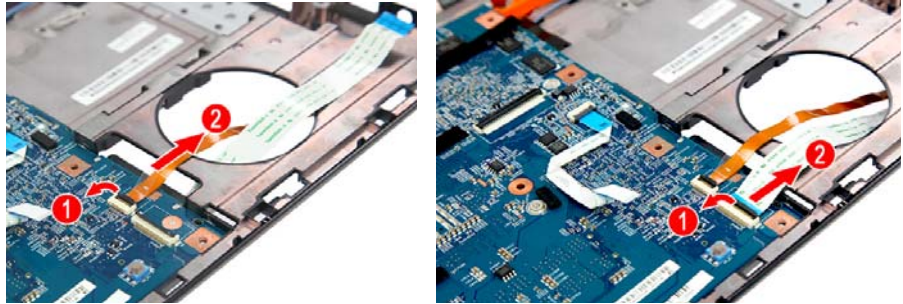
- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Complete the steps in “[Removing the battery](#)” on [page 38](#).
- 3 Remove the memory from the old system board and install it on the new system board by following the instructions in the “[Adding or replacing memory modules](#)” section on [page 45](#).
- 4 If the notebook has a wireless card installed, remove the card from the old system board and install it on the new system board by following the instructions in the “[Replacing the wireless card](#)” section on [page 43](#).
- 5 Remove the hard drive by performing [steps 3 and 4](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 6 Remove the optical drive by performing [steps 3 and 4](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 7 Remove the palm rest by performing [steps 8 – 13](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 8 Remove the keyboard by performing [steps 10 – 14](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).



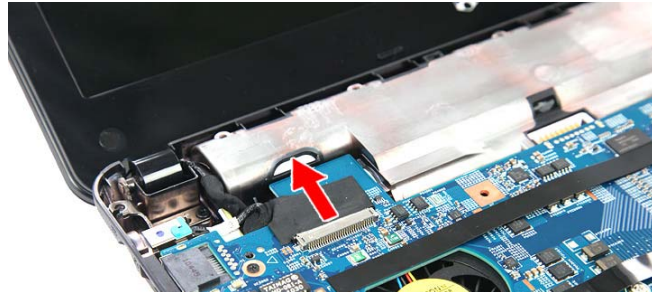
Caution

The keyboard is connected to the notebook through a keyboard cable. Disconnect this cable first before pulling the keyboard away from the palm rest assembly.

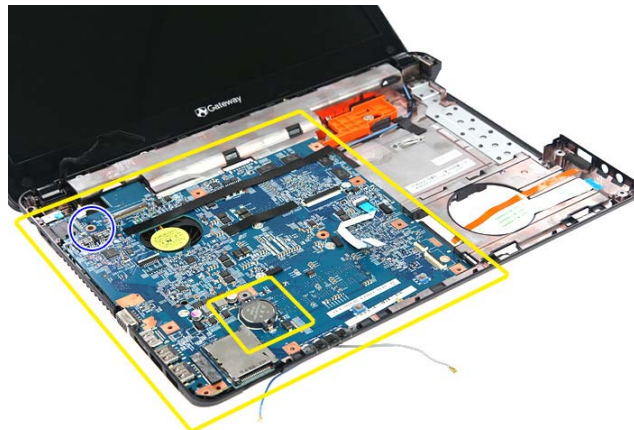
- 9 Remove USB board by performing [steps 6 and 7](#) of the “[Replacing the USB board](#)” procedure on [page 63](#).
- 10 Remove the Bluetooth module by performing [step 6](#) of the “[Replacing the Bluetooth module](#)” procedure on [page 65](#).
- 11 Unlock the two USB board cable connectors **(1)**, and then remove the USB board cables from their system board connectors **(2)**.



- 12 Disconnect the LCD cable from its system board connector.



- 13 Remove the system board screw.

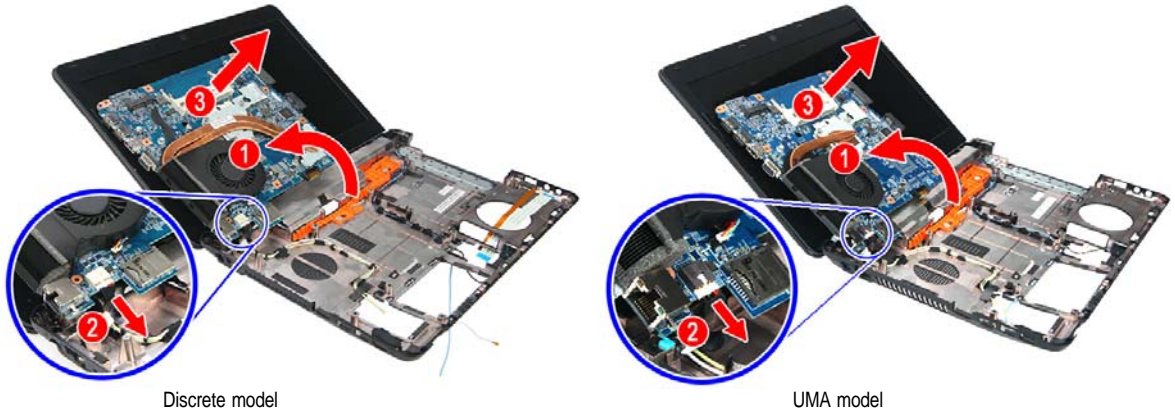


Note

A circuit board that is $>10\text{ cm}^2$ has been highlighted with a yellow rectangle as shown in the previous image. Follow the local regulations for disposing this type of circuit board.

The RTC battery has been highlighted with a yellow box in the previous image. Detach the RTC battery and follow the local regulations for disposing it.

- 14 Carefully pull the system board out of the base enclosure, and then flip it over **(1)**.
- 15 Disconnect the DC-input cable from its system board connector **(2)**, and then remove the system board **(3)**.

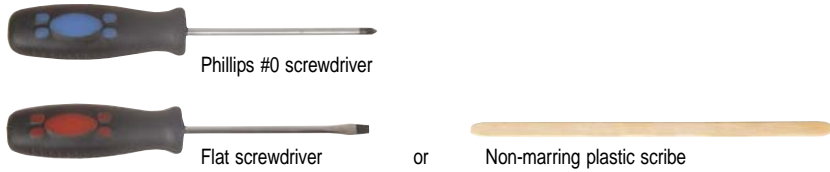


- 16 Remove the cooling assembly by performing [steps 4 – 7](#) of the “[Replacing the cooling assembly](#)” procedure on [page 70](#).
- 17 If your new system board does not include a processor, remove the processor from the old system board and install it on the new system board by performing [steps 5 and 6](#) in the “[Replacing the processor](#)” section on [page 73](#).
- 18 Reinstall the cooling assembly by performing [steps 8 – 11](#) of the “[Replacing the cooling assembly](#)” procedure on [page 70](#).
- 19 Place the new system board in the base enclosure and secure it with the screw removed in [step 13](#).
- 20 Reconnect the DC-input, LCD and USB board cables to their system board connectors.
- 21 Reinstall the USB board by performing [steps 8 – 9](#) of the “[Replacing the USB board](#)” procedure on [page 63](#).
- 22 Reinstall the Bluetooth module by performing [step 7](#) of the “[Replacing the Bluetooth module](#)” procedure on [page 65](#).
- 23 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 24 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 25 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 26 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 27 If you have disconnected any wireless antennas, reconnect them now.
- 28 Reinstall the bay cover.
- 29 Reinstall the battery.



Replacing the cooling assembly

Tools you need to complete this task:



Additional materials you need to complete this task:

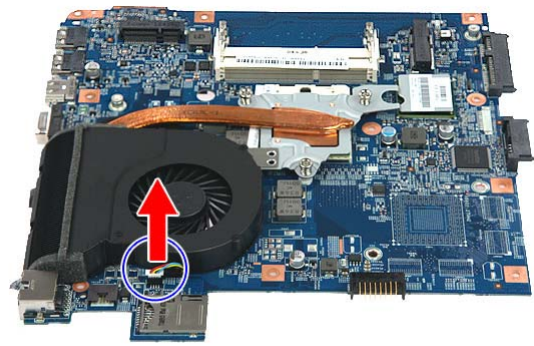
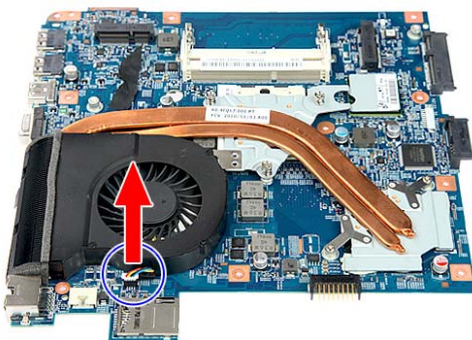
- Soft cloth and isopropyl alcohol; or alcohol pad
- Thermal grease

Screws removed during this task:

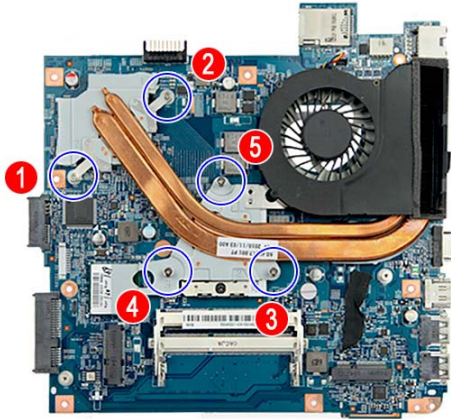
- 3 black M2.5x6 (bay cover)
- 1 black M2x3 (hard drive)
- 1 black M2.5x6 (optical drive)
- 5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 1 black M2x3 (system board)

► To replace the cooling assembly:

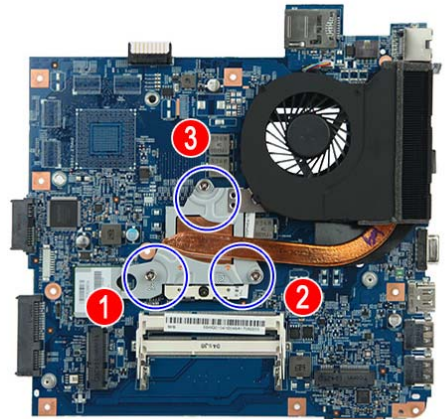
- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the system board by performing steps 1 – 15 of the “[Replacing the system board](#)” procedure on [page 67](#).
- 3 Turn the system board over to access the cooling fan cable.
- 4 Disconnect the cooling fan cable from its system board connector.



- 5 Loosen the spring-loaded captive screws securing the cooling assembly. Follow the screw sequence indicated on the below images.

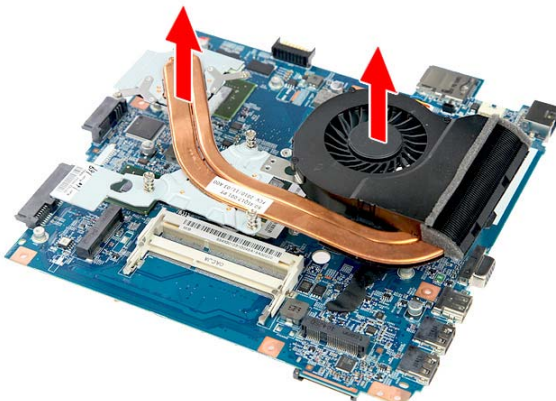


Discrete model

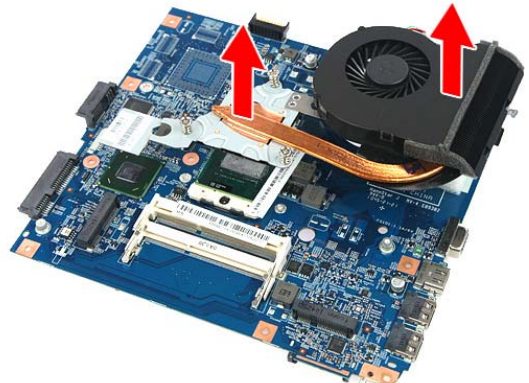


UMA model

- 6 Remove the cooling assembly from the system board.



Discrete model



UMA model

- 7 Lay the cooling assembly down in an upright position to avoid tainting your work space with thermal grease.
- 8 Moisten a soft cloth with isopropyl alcohol and clean the processor die to remove any thermal grease residue. Wipe the die surface several times to make sure that no particles or dust contaminants are evident. Allow the alcohol to evaporate before continuing.



Caution

Do not touch the contact surface of the new cooling assembly nor the processor die as this may leave dead skin cells or oils from your finger that can result in poor thermal grease performance.

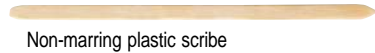
- 9 Apply just enough thermal grease to evenly coat the surface of the processor die.
- 10 Place the new cooling assembly on the system board and tighten its captive screws to secure it in place. Follow the sequence of the number beside each screw when securing the cooling assembly.

- 11 Reconnect the cooling fan cable to its system board connector.
- 12 Reconnect the DC input cable to its system board connector.
- 13 Reinstall the system board by performing [steps 19](#) and [20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 14 Reconnect the LCD, USB board and Bluetooth module cables to their system board connectors.
- 15 Reinstall the Bluetooth module by performing [step 7](#) of the “[Replacing the Bluetooth module](#)” procedure on [page 65](#).
- 16 Reinstall the USB board by performing [steps 8 – 9](#) of the “[Replacing the USB board](#)” procedure on [page 63](#).
- 17 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 18 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 19 Reinstall the optical drive by performing [steps 10](#) and [11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 20 Reinstall the hard drive by performing [steps 8](#) and [9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 21 If you have disconnected any wireless antennas, reconnect them now.
- 22 Reinstall the bay cover.
- 23 Reinstall the battery.



Replacing the processor























Tools you need to complete this task:



Additional materials you need to complete this task:

- Soft cloth and isopropyl alcohol; or alcohol pad
- Thermal grease

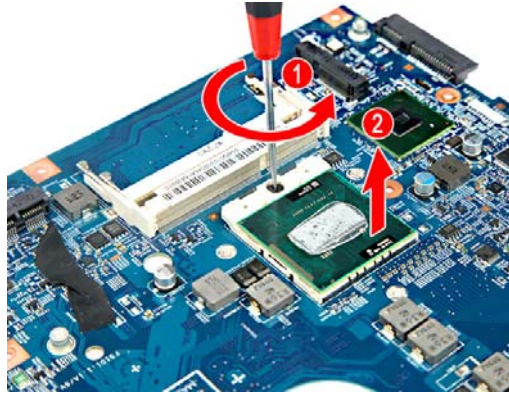
Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-              13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-  1 black M2x3 (system board)

► To replace the processor:

- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the system board by performing [steps 1 – 15](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 3 Remove the cooling assembly by performing [steps 4 – 7](#) of the “[Replacing the cooling assembly](#)” procedure on [page 70](#).
- 4 Remove the barcode sticker on top of the processor.

- 5 Use a flat-blade screwdriver to turn the processor lock screw counter-clockwise **(1)**.
- 6 Remove the old processor from the system board **(2)**.



- 7 Align pin 1 of the new processor (indicated by the gold arrow on the corner of the processor) with the beveled corner of the processor socket. The processor will easily fit into the socket if you oriented it properly.



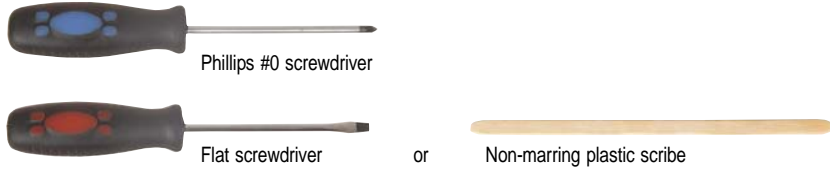
- 8 Use a flat-blade screwdriver to turn the lock screw 180° clockwise to secure the processor in place.
- 9 Apply just enough thermal grease to evenly coat the surface of the processor die.
- 10 Reinstall the cooling assembly by performing [steps 10 – 11](#) of the “[Replacing the cooling assembly](#)” procedure on [page 70](#).
- 11 Reinstall the system board by performing [steps 19 and 20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 12 Reconnect the LCD, USB board and Bluetooth module cables to their system board connectors.
- 13 Reinstall the Bluetooth module by performing [step 7](#) of the “[Replacing the Bluetooth module](#)” procedure on [page 65](#).
- 14 Reinstall the USB board by performing [steps 8 – 9](#) of the “[Replacing the USB board](#)” procedure on [page 63](#).
- 15 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 16 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).

- 17 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 18 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 19 If you have disconnected any wireless antennas, reconnect them now.
- 20 Reinstall the bay cover.
- 21 Reinstall the battery.






























Replacing the LCD panel assembly

Tools you need to complete this task:



Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-               13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-  1 black M2x3 (system board)
-     4 black M2.5x6 (LCD panel hinges)

► To replace the LCD panel assembly:

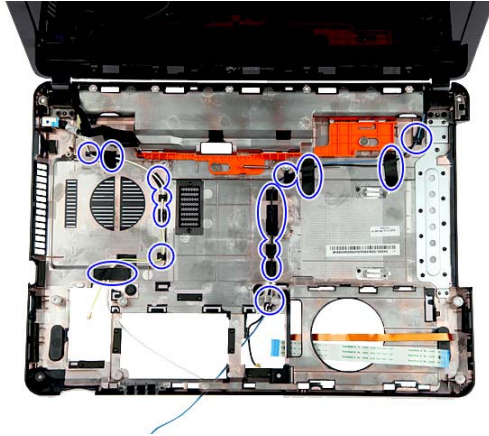
- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 If the notebook has a wireless card installed, complete the steps in “[Removing the bay cover](#)” on [page 39](#), and then unplug the antenna cables. If there’s no wireless card installed, proceed to [step 3](#).
- 3 Remove the hard drive by performing [steps 3](#) and [4](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 4 Remove the optical drive by performing [steps 3](#) and [4](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 5 Remove the palm rest by performing [steps 8 – 13](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 6 Remove the keyboard by performing [steps 10 – 14](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).

Caution

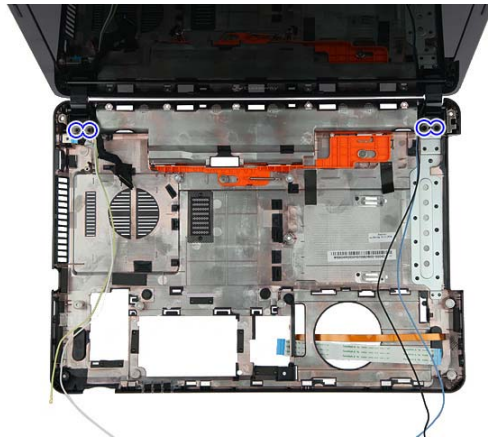
The keyboard is connected to the notebook through a keyboard cable. Disconnect this cable first before pulling the keyboard away from the palm rest assembly.

- 7 Remove the system board by performing [steps 1 – 15](#) of the “[Replacing the system board](#)” procedure on [page 67](#).

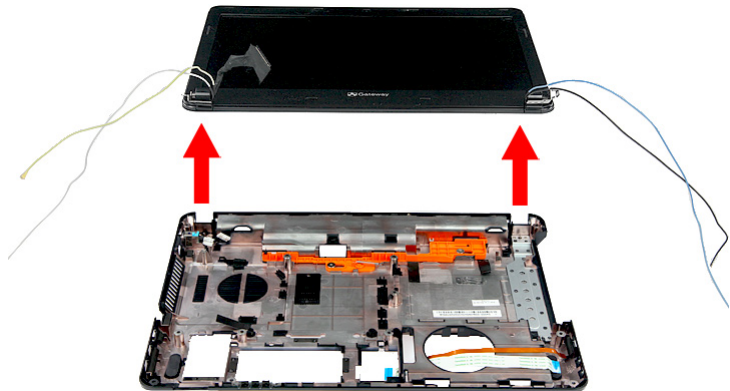
- 8 If the notebook has a wireless card installed, note the antenna cable routing for later reference and then perform [step 9](#) to release the antenna cables from the palm rest.
- 9 Release the antenna cables from the adhesive tabs and latches securing them.



- 10 Carefully open the LCD panel to its fully extended position.
- 11 Remove the LCD hinge screws securing the LCD assembly.



- 12 Lift the LCD panel assembly up and away from the notebook.



- 13 Position the new LCD panel assembly on the notebook, and then secure it with the hinge screws removed in [step 11](#).
- 14 If the notebook has a wireless card installed, proceed to [step 15](#) to arrange the antenna cables.
- 15 Refer to the antenna cable routing note made on [step 9](#) and secure the antenna cables to the base enclosure before pulling the ends downward to the wireless card compartment.
- 16 Reinstall the system board by performing [steps 19](#) and [20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 17 Reinstall the keyboard by performing [steps 21](#) – [24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 18 Reinstall the palm rest module by performing [steps 14](#) – [17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 19 Reinstall the optical drive by performing [steps 10](#) and [11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 20 Reinstall the hard drive by performing [steps 8](#) and [9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 21 If you have disconnected any wireless antennas, reconnect them now.
- 22 Reinstall the bay cover.
- 23 Reinstall the battery.

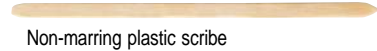


Replacing the LCD front panel

Tools you need to complete this task:



or



Screws removed during this task:

- 3 black M2.5×6 (bay cover)
- 1 black M2×3 (hard drive)
- 1 black M2.5×6 (optical drive)
- 5 black M2×3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 13 black M2.5×6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 1 black M2×3 (system board)
- 4 black M2.5×6 (LCD panel hinges)
- 2 black M2.5×5 (LCD front panel)

► To replace the LCD front panel:

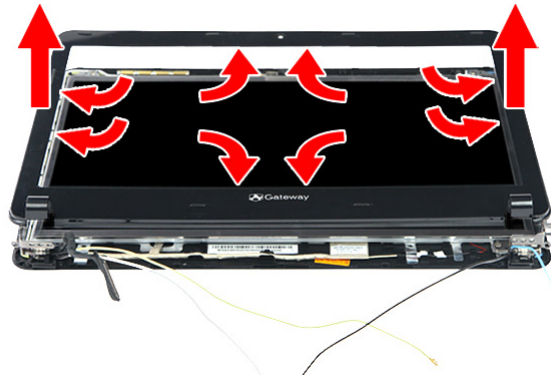
- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the LCD panel assembly by performing [steps 2 – 12](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 3 Remove the screw covers from the corner of the LCD front panel.



- 4 Remove the LCD front panel screws.



- 5 Carefully pry loose the front panel from the LCD assembly lid. Start on the bottom side, continue to the left and right sides, and finally the top side. Remove the front panel.



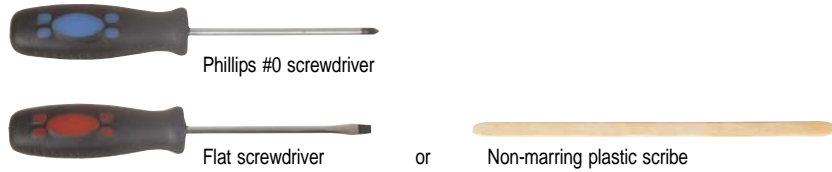
- 6 Place the new front panel on top of the LCD assembly lid. Make sure that the LCD, webcam, microphone, and antenna cables are properly routed on the hinge sides.
- 7 Press the front panel on all sides until it snaps into place. Make sure that there is no gap between the front panel and the LCD assembly lid.
- 8 Secure the front panel with screws removed in [step 4](#).
- 9 Return the LCD front panel screw covers to their places.
- 10 Reinstall the LCD panel assembly by following the [steps 13 – 15](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 11 Reinstall the system board by performing [steps 19 and 20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 12 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 13 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 14 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 15 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).

- 16 If you have disconnected any wireless antennas, reconnect them now.
- 17 Reinstall the bay cover.
- 18 Reinstall the battery.



Replacing the webcam

Tools you need to complete this task:

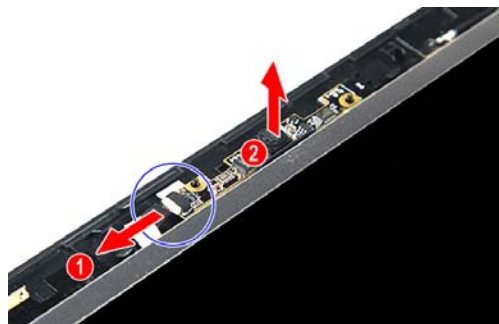


Screws removed during this task:

- 3 black M2.5x6 (bay cover)
- 1 black M2x3 (hard drive)
- 1 black M2.5x6 (optical drive)
- 5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 1 black M2x3 (system board)
- 4 black M2.5x6 (LCD panel hinges)
- 2 black M2.5x5 (LCD front panel)

► To replace the webcam:

- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the LCD panel assembly by performing [steps 2 – 12](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 3 Remove the LCD front panel by performing [steps 3 – 5](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
- 4 Disconnect the webcam cable **(1)**, and then pry the board from the LCD assembly lid **(2)**.

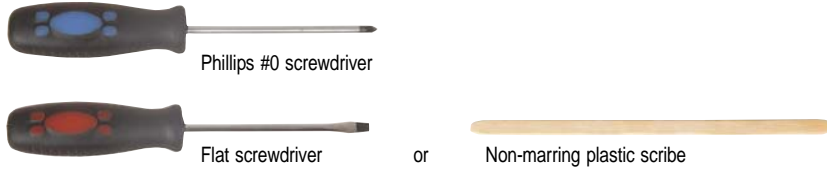


- 5 Place the new webcam on the top side of the LCD assembly lid.
- 6 Reconnect the webcam cable to its board connector.
- 7 Reinstall the LCD front panel by performing [steps 6 – 9](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
Make sure the webcam lens is aligned with camera peephole on the LCD front panel before you secure the panel in place.
- 8 Reinstall the LCD panel assembly by following the [steps 13 – 15](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 9 Reinstall the system board by performing [steps 19 and 20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 10 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 11 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 12 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 13 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 14 If you have disconnected any wireless antennas, reconnect them now.
- 15 Reinstall the bay cover.
- 16 Reinstall the battery.



Replacing the LCD panel

Tools you need to complete this task:

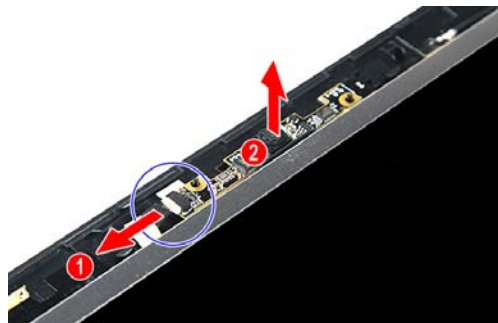


Screws removed during this task:

- 3 black M2.5×6 (bay cover)
- 1 black M2×3 (hard drive)
- 1 black M2.5×6 (optical drive)
- 5 black M2×3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 13 black M2.5×6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
- 1 black M2×3 (system board)
- 4 black M2.5×6 (LCD panel hinges)
- 2 black M2.5×5 (LCD front panel)
- 4 chrome M2.5×4 (LCD panel)

► To replace the LCD panel:

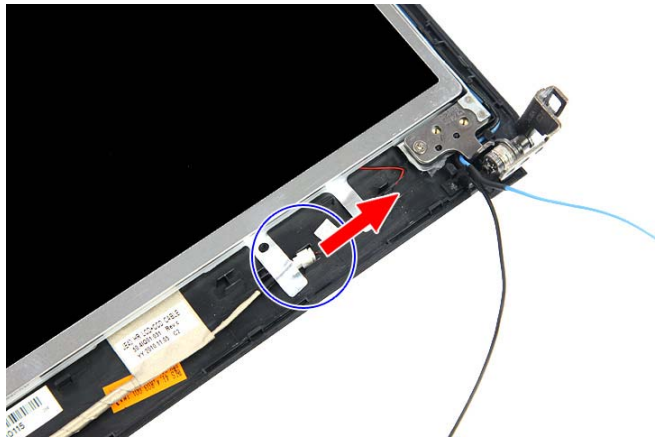
- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the LCD panel assembly by performing [steps 2 – 12](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 3 Remove the LCD front panel by performing [steps 3 – 5](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
- 4 Disconnect the webcam cable (1), and then pry the board from the LCD assembly lid (2).



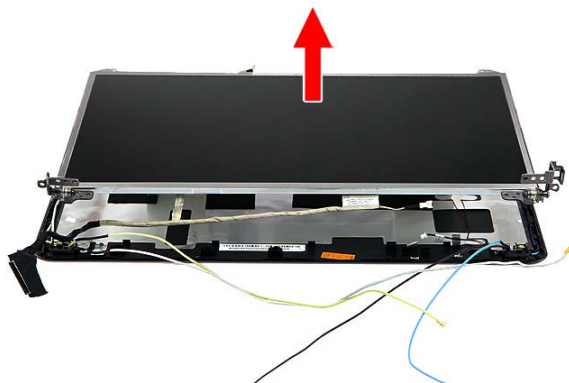
- 5 Remove the LCD panel bracket screws.



- 6 Disconnect the microphone cable.



- 7 Remove the LCD panel from the LCD assembly lid.

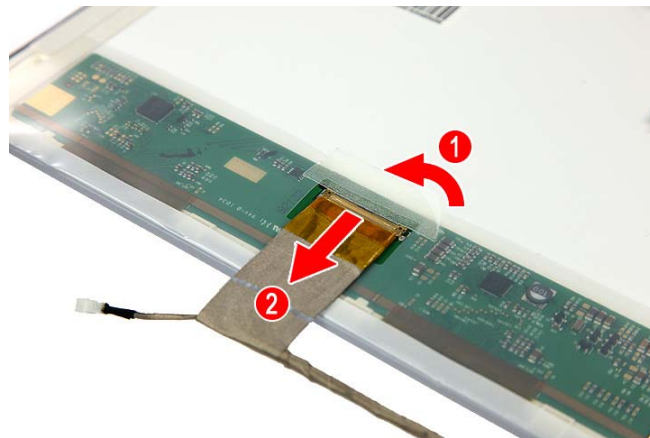


- 8 Turn the LCD on its front to access the LCD-webcam cable.

- 9 Detach the LCD-webcam cable from the LCD's underside.



- 10 Disconnect the LCD-webcam cable from the LCD PCB.



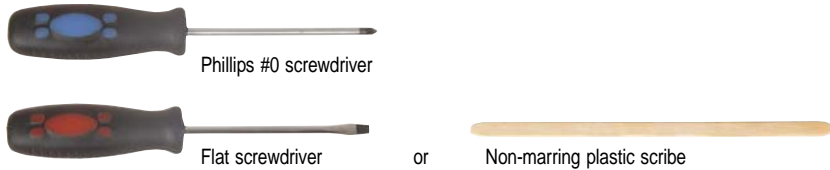
- 11 Attach the LCD panel brackets and the LCD-webcam cable to the new LCD.
- 12 Place the new LCD panel on the LCD assembly lid.
- 13 Reconnect the microphone cable.
- 14 Secure the new LCD panel with the screws removed in [step 5](#).
- 15 Reinstall the LCD front panel by performing [steps 6 – 9](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
Make sure the webcam lens is aligned with camera peephole on the LCD front panel before you secure the panel in place.
- 16 Reinstall the LCD panel assembly by following the [steps 13 – 15](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 17 Reinstall the system board by performing [steps 19 and 20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 18 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 19 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 20 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).

- 21 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 22 If you have disconnected any wireless antennas, reconnect them now.
- 23 Reinstall the bay cover.
- 24 Reinstall the battery.








































Replacing the LCD panel hinge brackets

Tools you need to complete this task:



Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-               13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-  1 black M2x3 (system board)
-     4 black M2.5x6 (LCD panel hinges)
-   2 black M2.5x5 (LCD front panel)
-     4 chrome M2.5x4 (LCD panel)
-     4 chrome M2x3 (LCD panel hinge brackets)

► To replace the LCD:

- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the LCD panel assembly by performing [steps 2 – 12](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 3 Remove the LCD front panel by performing [steps 3 – 5](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
- 4 Remove the LCD panel by performing [steps 4 – 7](#) of the “[Replacing the LCD panel](#)” procedure on [page 84](#).

- 5 Remove the screws securing the LCD panel brackets.

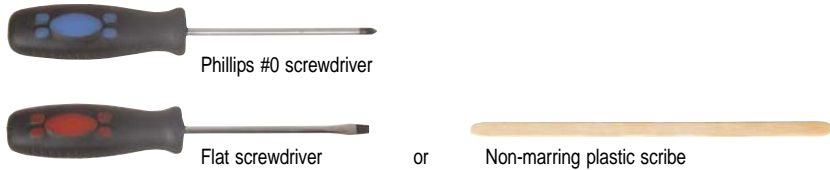


- 6 Attach the new LCD panel brackets to the LCD.
- 7 Reinstall the LCD panel by performing [steps 11 – 14](#) of the “[Replacing the LCD panel](#)” procedure on [page 84](#).
- 8 Reinstall the LCD front panel by performing [steps 6 – 9](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
Make sure the webcam lens is aligned with camera peephole on the LCD front panel before you secure the panel in place.
- 9 Reinstall the LCD panel assembly by following the [steps 13 – 15](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 10 Reinstall the system board by performing [steps 19](#) and [20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 11 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 12 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 13 Reinstall the optical drive by performing [steps 10](#) and [11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 14 Reinstall the hard drive by performing [steps 8](#) and [9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 15 If you have disconnected any wireless antennas, reconnect them now.
- 16 Reinstall the bay cover.
- 17 Reinstall the battery.




































Replacing the microphone

Tools you need to complete this task:



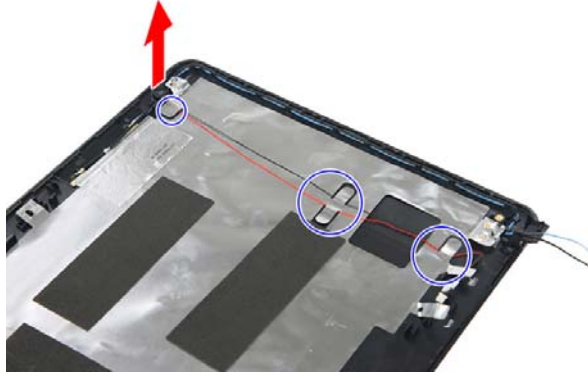
Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-               13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-  1 black M2x3 (system board)
-     4 black M2.5x6 (LCD panel hinges)
-   2 black M2.5x5 (LCD front panel)
-     4 chrome M2.5x4 (LCD panel)

► To replace the microphone:

- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the LCD panel assembly by performing [steps 2 – 12](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 3 Remove the LCD front panel by performing [steps 3 – 5](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
- 4 Remove the LCD panel by performing [steps 4 – 7](#) of the “[Replacing the LCD panel](#)” procedure on [page 84](#).

- 5 Release the microphone cable from the adhesive tabs securing them, and then remove the microphone from the LCD assembly lid.

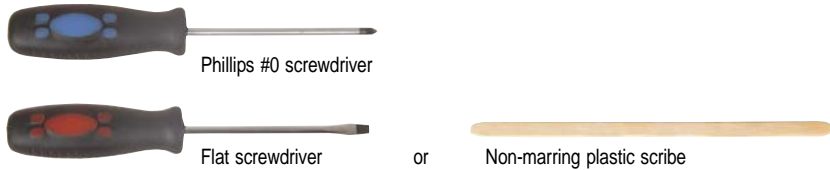


- 6 Place the new microphone on the LCD assembly lid and secure its cable on the adhesive tabs.
- 7 Reinstall the LCD panel by performing [steps 11 – 14](#) of the “[Replacing the LCD panel](#)” procedure on [page 84](#).
- 8 Reinstall the LCD front panel by performing [steps 6 – 9](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
Make sure the webcam lens is aligned with camera peephole on the LCD front panel before you secure the panel in place.
- 9 Reinstall the LCD panel assembly by following the [steps 13 – 15](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 10 Reinstall the system board by performing [steps 19](#) and [20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 11 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 12 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 13 Reinstall the optical drive by performing [steps 10](#) and [11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 14 Reinstall the hard drive by performing [steps 8](#) and [9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 15 If you have disconnected any wireless antennas, reconnect them now.
- 16 Reinstall the bay cover.
- 17 Reinstall the battery.




































Replacing the antennas

Tools you need to complete this task:



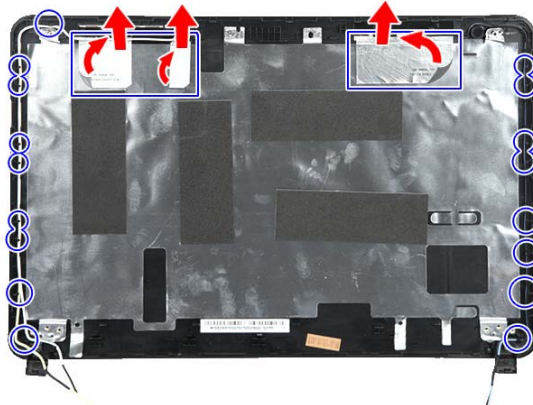
Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the [“Replacing the keyboard”](#) procedure on [page 53](#)
-               13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the [“Replacing the keyboard”](#) procedure on [page 53](#)
-  1 black M2x3 (system board)
-     4 black M2.5x6 (LCD panel hinges)
-   2 black M2.5x5 (LCD front panel)
-     4 chrome M2.5x4 (LCD panel)

► To replace the antennas:

- 1 Complete the steps in [“Preparing the notebook”](#) on [page 37](#).
- 2 Remove the LCD panel assembly by performing [steps 2 – 12](#) of the [“Replacing the LCD panel assembly”](#) procedure on [page 76](#).
- 3 Remove the LCD front panel by performing [steps 3 – 5](#) of the [“Replacing the LCD front panel”](#) procedure on [page 79](#).
- 4 Remove the LCD panel by performing [steps 4 – 7](#) of the [“Replacing the LCD panel”](#) procedure on [page 84](#).

- 5 Release the antenna cables from the retaining latches securing them, and then carefully pry the cables loose from the LCD assembly lid to remove the antennas.

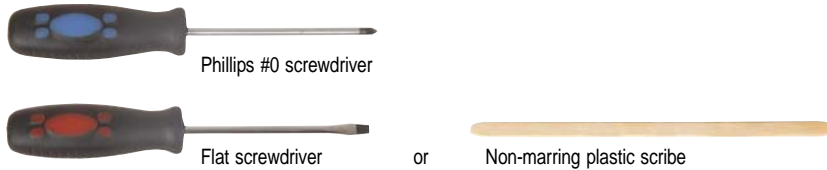


- 6 Secure the new antenna cables on the LCD assembly lid and route their cables underneath the adhesive tabs.
- 7 Reinstall the LCD panel by performing [steps 11 – 14](#) of the “[Replacing the LCD panel](#)” procedure on [page 84](#).
- 8 Reinstall the LCD front panel by performing [steps 6 – 9](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
Make sure the webcam lens is aligned with camera peephole on the LCD front panel before you secure the panel in place.
- 9 Reinstall the LCD panel assembly by following the [steps 13 – 15](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 10 Reinstall the system board by performing [steps 19 and 20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 11 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 12 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 13 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 14 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 15 If you have disconnected any wireless antennas, reconnect them now.
- 16 Reinstall the bay cover.
- 17 Reinstall the battery.




































Replacing the LCD assembly lid

Tools you need to complete this task:



Screws removed during this task:

-  3 black M2.5x6 (bay cover)
-  1 black M2x3 (hard drive)
-  1 black M2.5x6 (optical drive)
-      5 black M2x3 (keyboard frame - top base side) - Indicated by A in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-               13 black M2.5x6 (keyboard frame/palm rest module - base side) - indicated by B in [step 8](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#)
-  1 black M2x3 (system board)
-     4 black M2.5x6 (LCD panel hinges)
-   2 black M2.5x5 (LCD front panel)
-     4 chrome M2.5x4 (LCD panel)

► To replace the LCD assembly lid:

- 1 Complete the steps in “[Preparing the notebook](#)” on [page 37](#).
- 2 Remove the LCD panel assembly by performing [steps 2 – 12](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).
- 3 Remove the LCD front panel by performing [steps 3 – 5](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
- 4 Remove the LCD panel by performing [steps 4 – 7](#) of the “[Replacing the LCD panel](#)” procedure on [page 84](#).
- 5 If you are going to use the same webcam, microphone and wireless antennas, remove these items from the old LCD assembly lid and attach them to the new one. Refer to the related replacement procedure on previous pages for instructions.
- 6 Reinstall the LCD panel by performing [steps 11 – 14](#) of the “[Replacing the LCD panel](#)” procedure on [page 84](#).
- 7 Reinstall the LCD front panel by performing [steps 6 – 9](#) of the “[Replacing the LCD front panel](#)” procedure on [page 79](#).
Make sure the webcam lens is aligned with camera peephole on the LCD front panel before you secure the panel in place.
- 8 Reinstall the LCD panel assembly by following the [steps 13 – 15](#) of the “[Replacing the LCD panel assembly](#)” procedure on [page 76](#).

- 9 Reinstall the system board by performing [steps 19 and 20](#) of the “[Replacing the system board](#)” procedure on [page 67](#).
- 10 Reinstall the keyboard by performing [steps 21 – 24](#) of the “[Replacing the keyboard](#)” procedure on [page 53](#).
- 11 Reinstall the palm rest module by performing [steps 14 – 17](#) of the “[Replacing the palm rest module](#)” procedure on [page 48](#).
- 12 Reinstall the optical drive by performing [steps 10 and 11](#) of the “[Replacing the optical drive](#)” procedure on [page 46](#).
- 13 Reinstall the hard drive by performing [steps 8 and 9](#) of the “[Replacing the hard drive](#)” procedure on [page 41](#).
- 14 If you have disconnected any wireless antennas, reconnect them now.
- 15 Reinstall the bay cover.
- 16 Reinstall the battery.



CHAPTER 4

Troubleshooting

- Diagnosing problems
- System test procedures
- Power-On Self-Test (POST) error message
- Index of error messages
- Phoenix BIOS beep codes
- Symptom-to-FRU error messages
- Intermittent problems
- Undetermined problems

Diagnosing problems

Use the following procedure as a guide for diagnosing notebook problems.



Important

The diagnostic tests are intended to test only Acer products. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.


- 1 Obtain the failing symptoms in as much detail as possible.
- 2 Verify the symptoms by attempting to re-create the failure by running the diagnostic test or by repeating the same operation.
- 3 Use the following table with the verified symptom to determine which page to go to.

| Symptoms (Verified) | Go To |
|---|--|
| Power failure. (The power indicator does not go on or stay on.) | “Testing the power system” on page 100 |
| POST does not complete. No beep or error codes are indicated. | <ul style="list-style-type: none"> ▪ “Power-On Self-Test (POST) error message” on page 102 ▪ “Undetermined problems” on page 115 |
| POST detects an error and displayed messages on screen. | “Index of error messages” on page 103 |
| Other symptoms (LCD display problems or others). | “Power-On Self-Test (POST) error message” on page 102 |
| Symptoms cannot be re-created (intermittent problems). | <ul style="list-style-type: none"> ▪ Use the customer-reported symptoms and go to “Power-On Self-Test (POST) error message” on page 102 ▪ “Intermittent problems” on page 114 ▪ “Undetermined problems” on page 115 |

System test procedures

Testing the optical drive

Use the following procedure to isolate a problem in an optical drive controller, driver, or drive.

 **Important**
Make sure that the CD-ROM does not have any label attached to it. The label can cause damage to the drive or can cause the drive to fail.


▶ To test the optical drive:

- 1 Boot from the diagnostics diskette and start the diagnostics program.
- 2 Run the CD-ROM Test and see if the test completes successfully.
- 3 Follow the instructions in the message window.
If an error occurs, reconnect the connector on the system board.
If the error still remains:
- 4 Reconnect the external optical drive to a USB jack.
- 5 Replace the external optical drive.
- 6 Replace the system board.



Testing the keyboard or auxiliary input device

If the internal keyboard does not work or an unexpected character appears, make sure that the flexible cable extending from the keyboard is correctly seated in the connector on the system board. If the keyboard cable is connected correctly, run the Keyboard Test.


 **Important**
Disconnect any external keyboards before testing the built-in keyboard.

If the tests detect a keyboard problem, do the following one at a time.

▶ To correct the problem:

- 1 Reconnect the keyboard cable to the system board.
- 2 Replace the keyboard.
- 3 Replace the system board.



 **Important**
Do not replace a non-defective FRU.

The following auxiliary input devices are supported by this notebook:

- Numeric keypad
- External keyboard

If any of these devices do not work, reconnect the cable connector and repeat the failing operation.

Testing the memory

Memory errors can stop your programs, show error messages on the screen, or hang the system.

► To test the memory:

- 1 Boot from the diagnostics diskette and start the diagnostics program.
- 2 Run the Memory Test and see if the test completes successfully.
- 3 Press F2 in the test items.
- 4 Follow the instructions in the message window.



Important

Make sure that each memory card is fully installed into the connector. A loose connection can cause an error.



Testing the power system

► To test for a power problem:

- Turn on the notebook using each of the following power sources:
 - Remove the battery pack, connect the power adapter, then make sure that the notebook turns on using AC power.
 - Disconnect the power adapter, install a charged battery pack, then make sure that power is supplied by the battery pack.



If you suspect a power problem, complete the appropriate power supply check:

- [“Check the power adapter” on page 100](#)
- [“Check the battery pack” on page 101](#)

Check the power adapter

Unplug the power adapter cable from the notebook and measure the output voltage at the power adapter cable plug. See the following figure.

Pin 1: +19 to +20.5V
Pin 2: 0V, Ground

- If the voltage is not correct, replace the power adapter.
- If the voltage is within the range, do the following:
 - Replace the system board.
 - If the problem is not corrected, see [“Undetermined problems” on page 115](#).
 - If the power-on indicator does not light up, check the power adapter’s power cord for correct continuity and installation.
 - If the operational charge does not work, see [“Check the battery pack” on page 101](#).



Important

An audible noise from the power adapter does not always indicate a defect.

Check the battery pack

▶ To check the battery pack using software:

- 1 Open Power Management in the Windows Control Panel.
- 2 In Power Meter, make sure that the parameters shown for Current Power Source and Total Battery Power Remaining are correct.
- 3 Repeat the steps 1 and 2, for both battery and adapter. This helps you identify first the problem is on recharging or discharging.

■
▶ To check the battery pack using hardware:

- 1 Turn off the notebook.
- 2 Remove the battery pack and measure the voltage between battery terminals 1 (+) and 6 (ground).
- 3 If the voltage is still less than 7.5 Vdc after recharging, replace the battery.

■
✓ Important

To check the battery charge operation, use a discharged battery pack or a battery pack that has less than 50% of the total power remaining when installed in the notebook.

If the battery status indicator does not light up, remove the battery pack and let it return to room temperature. Re-install the battery pack.

If the charge indicator still does not light up, replace the battery pack. If the charge indicator still does not light up, replace the DC/DC charger board.

Testing the touchpad

If the touchpad doesn't work, do the following actions one at a time to correct the problem.

▶ To test the touchpad:

- 1 Reconnect the touchpad cables.
- 2 Replace the touchpad.
- 3 Replace the system board.

■
✓ Important

Do not replace a non-defective FRU.

After you use the touchpad, the pointer may drift on the screen for a short time. This self-acting pointer movement can occur when a slight, steady pressure is applied to the touchpad pointer. This symptom is not a hardware problem. No service actions are necessary if the pointer movement stops in a short period of time.

Power-On Self-Test (POST) error message

The POST error message index lists the error message and their possible causes. The most likely cause is listed first.



Important

Perform the FRU replacement or actions in the sequence shown in the FRU/Action column. If the FRU replacement does not solve the problem, put the original part back in the notebook. Do not replace a non-defective FRU.

This index can also help you determine the next possible FRU to be replaced when servicing a notebook.

If the symptom is not listed, see [“Undetermined problems” on page 115](#).

The following lists the error messages that the BIOS displays on the screen and the error symptoms classified by function.



Important

Most of the error messages occur during POST. Some of them display information about a hardware device, such as the amount of memory installed. Others may indicate a problem with a device, such as the way it has been configured.



Important

If the system fails after you make changes in the BIOS Setup Utility menus, reset the notebook, enter Setup, and install Setup defaults or correct the error.

Index of error messages

Error codes

| Error Codes | Error Messages |
|-----------------|--|
| 006 | Equipment Configuration Error Causes: 1. CPU BIOS Update Code Mismatch 2. IDE Primary Channel Master Drive Error (The causes are shown before "Equipment Configuration Error") |
| 010 | Memory Error at xxx:xxx:xxxh (R:xxxh, W:xxxh) |
| 070 | Real Time Clock Error |
| 071 | CMOS Battery Bad |
| 072 | CMOS Checksum Error |
| 110 | System is disabled. An incorrect password was entered. |
| <No error code> | Battery is critically low. In this situation BIOS issues four short beeps, then shuts the system down. No message is displayed. |
| <No error code> | Temperature is critically high. In this situation BIOS shuts the system down. No message is displayed. |

Error messages

| Error Messages | FRU/Action Sequence |
|---|--|
| Failure Fixed Disk | <ul style="list-style-type: none"> ▪ Reconnect the hard disk drive connector. ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Test or replace the hard disk drive. ▪ Test or replace the system board. |
| Stuck Key | See "Testing the keyboard or auxiliary input device" on page 99. |
| Keyboard error | See "Testing the keyboard or auxiliary input device" on page 99. |
| Keyboard Controller Failed | See "Testing the keyboard or auxiliary input device" on page 99. |
| Keyboard locked - Unlock key switch | Unlock the external keyboard. |
| Monitor type does not match CMOS - Run Setup | Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. |
| Shadow RAM Failed at offset: nnnn | <ul style="list-style-type: none"> ▪ Test or replace the BIOS ROM. ▪ Test or replace the system board. |
| System RAM Failed at offset: nnnn | <ul style="list-style-type: none"> ▪ Test or replace the SO-DIMM. ▪ Test or replace the system board. |
| Extended RAM Failed at offset: nnnn | <ul style="list-style-type: none"> ▪ Test or replace the SO-DIMM. ▪ Test or replace the system board. |
| System battery is dead - Replace and run Setup | Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. |
| System CMOS checksum bad - Default configuration used | Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. |

CHAPTER 4: Troubleshooting

| Error Messages | FRU/Action Sequence |
|---|--|
| System timer error | <ul style="list-style-type: none"> ▪ Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. ▪ Test or replace the system board. |
| Real time clock error | <ul style="list-style-type: none"> ▪ Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. ▪ Test or replace the system board. |
| Previous boot incomplete - Default configuration used | <ul style="list-style-type: none"> ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. ▪ Test or replace the system board. |
| Memory size found by POST differed from CMOS | <ul style="list-style-type: none"> ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Test or replace the SO-DIMM. ▪ Test or replace the system board. |
| Diskette drive A error | <ul style="list-style-type: none"> ▪ Make sure that the drive is defined with the proper diskette type in the BIOS Setup Utility. |
| Incorrect Drive A type - run SETUP | Make sure that the drive is defined with the proper diskette type in the BIOS Setup Utility |
| System cache error - Cache disabled | Test or replace the system board. |
| CPU ID: | Test or replace the system board. |
| DMA Test Failed | <ul style="list-style-type: none"> ▪ Test or replace the SO-DIMM. ▪ Test or replace the system board. |
| Software NMI Failed | <ul style="list-style-type: none"> ▪ Test or replace the SO-DIMM. ▪ Test or replace the system board. |
| Fail-Safe Timer NMI Failed | <ul style="list-style-type: none"> ▪ Test or replace the SO-DIMM. ▪ Test or replace the system board. |
| Device Address Conflict | <ul style="list-style-type: none"> ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. ▪ Test or replace the system board. |
| Allocation Error for device | <ul style="list-style-type: none"> ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. ▪ Test or replace the system board. |
| Failing Bits: nnnn | <ul style="list-style-type: none"> ▪ Test or replace the SO-DIMM. ▪ Test or replace the BIOS ROM. ▪ Test or replace the system board. |
| Fixed Disk n | None |
| Invalid System Configuration Data | <ul style="list-style-type: none"> ▪ Test or replace the BIOS ROM. ▪ Test or replace the system board. |

| Error Messages | FRU/Action Sequence |
|----------------------------|--|
| I/O device IRQ conflict | <ul style="list-style-type: none"> ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Test or replace the CMOS battery, run the BIOS Setup Utility to reconfigure system time, then reboot the system. ▪ Test or replace the system board. |
| Operating system not found | <ul style="list-style-type: none"> ▪ Run the BIOS Setup Utility and see if fixed disk and drive A: are properly identified. ▪ Test or replace the diskette drive ▪ Test or replace the hard disk drive ▪ Test or replace the system board |

No-beep error messages

| No-beep Error Messages | FRU/Action in Sequence |
|---|--|
| No beep, power-on indicator turns off and LCD is blank. | <ul style="list-style-type: none"> ▪ Test the power source (battery pack and power adapter). See "Testing the power system" on page 100. ▪ Make sure that every connector is connected tightly and correctly. ▪ Reconnect the SO-DIMM. ▪ Test or replace the LED board. ▪ Test or replace the system board. |
| No beep, power-on indicator turns on and LCD is blank. | <ul style="list-style-type: none"> ▪ Test the power source (battery pack and power adapter). See "Testing the power system" on page 100. ▪ Reconnect the LCD connector ▪ Check the hard disk drive. ▪ Check the LCD inverter ID. ▪ Check the LCD cable. ▪ Test or replace the LCD inverter. ▪ Test or replace the LCD. ▪ Test or replace the system board. |
| No beep, power-on indicator turns on and LCD is blank. But you can see POST on an external CRT. | <ul style="list-style-type: none"> ▪ Reconnect the LCD connectors. ▪ Check the LCD inverter ID. ▪ Check the LCD cable. ▪ Test or replace the LCD inverter. ▪ Test or replace the LCD. ▪ Test or replace the system board. |
| No beep, power-on indicator turns on and a blinking cursor shown on LCD during POST. | <ul style="list-style-type: none"> ▪ Make sure that every connector is connected tightly and correctly. ▪ Test or replace the system board. |
| No beep during POST but system runs correctly. | <ul style="list-style-type: none"> ▪ Test or replace the speaker. ▪ Test or replace the system board. |

Phoenix BIOS beep codes

| Code | Beeps | POST Routine Description |
|------|---------|---|
| 02h | | Verify Real Mode |
| 03h | | Disable Non-Maskable Interrupt (NMI) |
| 04h | | Get CPU type |
| 06h | | Initialize system hardware |
| 08h | | Initialize chipset with initial POST values |
| 09h | | Set IN POST flag |
| 0Ah | | Initialize CPU registers |
| 0Bh | | Enable CPU cache |
| 0Ch | | Initialize caches to initial POST values |
| 0Eh | | Initialize I/O component |
| 0Fh | | Initialize the local bus IDE |
| 10h | | Initialize Power Management |
| 11h | | Load alternate registers with initial POST values |
| 12h | | Restore CPU control word during warm boot |
| 13h | | Initialize PCI Bus Mastering devices |
| 14h | | Initialize keyboard controller |
| 16h | 1-2-2-3 | BIOS ROM checksum |
| 17h | | Initialize cache before memory autosize |
| 18h | | 8254 timer initialization |
| 1Ah | | 8237 DMA controller initialization |
| 1Ch | | Reset Programmable Interrupt Controller |
| 20h | 1-3-1-1 | Test DRAM refresh |
| 22h | 1-3-1-3 | Test 8742 Keyboard Controller |
| 24h | | Set ES segment register to 4 GB |
| 26h | | Enable A20 line |
| 28h | | Autosize DRAM |
| 29h | | Initialize POST Memory Manager |
| 2Ah | | Clear 215 KB base RAM |
| 2Ch | 1-3-4-1 | RAM failure on address line xxxx |
| 2Eh | 1-3-4-3 | RAM failure on data bits xxxx of low byte of memory bus |
| 2Fh | | Enable cache before system BIOS shadow |

| Code | Beeps | POST Routine Description |
|------|---------|--|
| 30h | 1-4-1-1 | RAM failure on data bits xxxx of high byte of memory bus |
| 32h | | Test CPU bus-clock frequency |
| 33h | | Initialize Phoenix Dispatch Manager |
| 36h | | Warm start shut down |
| 38h | | Shadow system BIOS ROM |
| 3Ah | | Autosize cache |
| 3Ch | | Advanced configuration of chipset registers |
| 3Dh | | Load alternate registers with CMOS values |
| 42h | | Initialize interrupt vectors |
| 45h | | POST device initialization |
| 46h | 2-1-2-3 | Check ROM copyright notice |
| 48h | | Check video configuration against CMOS |
| 49h | | Initialize PCI bus and devices |
| 4Ah | | Initialize all video adapters in system |
| 4Bh | | QuietBoot start (optional) |
| 4Ch | | Shadow video BIOS ROM |
| 4Eh | | Display BIOS copyright notice |
| 50h | | Display CPU type and speed |
| 51h | | Initialize EISA board |
| 52h | | Test keyboard |
| 54h | | Set key click if enabled |
| 58h | 2-2-3-1 | Test for unexpected interrupts |
| 59h | | Initialize POST display service |
| 5Ah | | Display prompt "Press F2 to enter SETUP" |
| 5Bh | | Disable CPU cache |
| 5Ch | | Test RAM between 512 and 640 KB |
| 60h | | Test extended memory |
| 62h | | Test extended memory address lines |
| 64h | | Jump to User Patch1 |
| 66h | | Configure advanced cache registers |
| 67h | | Initialize Multi Processor APIC |
| 68h | | Enable external and CPU caches |
| 69h | | Setup System Management Mode (SMM) area |

CHAPTER 4: Troubleshooting

| Code | Beeps | POST Routine Description |
|------|-------|--|
| 6Ah | | Display external L2 cache size |
| 6Bh | | Load custom defaults (optional) |
| 6Ch | | Display shadow-area message |
| 6Eh | | Display possible high address for UMB recovery |
| 70h | | Display error messages |
| 72h | | Check for configuration errors |
| 76h | | Check for keyboard errors |
| 7Ch | | Set up hardware interrupt vectors |
| 7Eh | | Initialize coprocessor if present |
| 80h | | Disable onboard Super I/O ports and IRQs |
| 81h | | Late POST device initialization |
| 82h | | Detect and install external RS232 ports |
| 83h | | Configure non-MCD IDE controllers |
| 84h | | Detect and install external parallel ports |
| 85h | | Initialize PC-compatible PnP ISA devices |
| 86h | | Re-initialize onboard I/O ports |
| 87h | | Configure Motherboard Configurable Devices (optional) |
| 88h | | Initialize BIOS Area |
| 89h | | Enable Non-Maskable Interrupts (NMIs) |
| 8Ah | | Initialize Extended BIOS Data Area |
| 8Bh | | Test and initialize PS/2 mouse |
| 8Ch | | Initialize floppy controller |
| 8Fh | | Determine number of ATA drives (optional) |
| 90h | | Initialize hard-disk controllers |
| 91h | | Initialize local-bus hard-disk controllers |
| 92h | | Jump to UserPatch2 |
| 93h | | Build MPTABLE for multi-processor boards |
| 95h | | Install CD ROM for boot |
| 96h | | Clear huge ES segment register |
| 97h | | Fixup Multi Processor table |
| 98h | 1-2 | Search for option ROMs. One long, two short beeps on checksum failure. |
| 99h | | Check for SMART drive (optional) |
| 9Ah | | Shadow option ROMs |

| Code | Beeps | POST Routine Description |
|------|-------|---|
| 9Ch | | Set up Power Management |
| 9Dh | | Initialize security engine (optional) |
| 9Eh | | Enable hardware interrupts |
| 9Fh | | Determine number of ATA and SCSI drives |
| A0h | | Set time of day |
| A2h | | Check key lock |
| A4h | | Initialize Typematic rate |
| A8h | | Erase F2 prompt |
| AAh | | Scan for F2 key stroke |
| ACh | | Enter SETUP |
| A Eh | | Clear Boot flag |
| B0h | | Check for errors |
| B2h | | POST done- prepare to boot operating system |
| B4h | 1 | One short beep before boot |
| B5h | | Terminate QuietBoot (optional) |
| B6h | | Check password (optional) |
| B9h | | Prepare Boot |
| BAh | | Initialize DMI parameters |
| BBh | | Initialize PnP Option ROMs |
| BCh | | Clear parity checkers |
| BDh | | Display MultiBoot menu |
| BEh | | Clear screen (optional) |
| BFh | | Check virus and backup reminders |
| C0h | | Try to boot with INT 19 |
| C1h | | Initialize POST Error Manager (PEM) |
| C2h | | Initialize error logging |
| C3h | | Initialize error display function |
| C4h | | Initialize system error handler |
| C5h | | PnPnd dual CMOS (optional) |
| C6h | | Initialize notebook docking (optional) |
| C7h | | Initialize notebook docking late |
| C8h | | Force check (optional) |
| C9h | | Extended checksum (optional) |

CHAPTER 4: Troubleshooting

| Code | Beeps | POST Routine Description |
|------|-------|-----------------------------------|
| D2h | | Unknown interrupt |
| E0h | | Initialize the chipset |
| E1h | | Initialize the bridge |
| E2h | | Initialize the CPU |
| E3h | | Initialize the system timer |
| E4h | | Initialize system I/O |
| E5h | | Check force recovery boot |
| E6h | | Checksum BIOS ROM |
| E7h | | Go to BIOS |
| E8h | | Set Huge Segment |
| E9h | | Initialize Multi Processor |
| EAh | | Initialize OEM special code |
| EBh | | Initialize PIC and DMA |
| ECh | | Initialize Memory type |
| EDh | | Initialize Memory size |
| EEh | | Shadow Boot Block |
| EFh | | System memory test |
| F0h | | Initialize interrupt vectors |
| F1h | | Initialize Run Time Clock |
| F2h | | Initialize video |
| F3h | | Initialize System Management Mode |
| F4h | 1 | Output one beep before boot |
| F5h | | Boot to Mini DOS |
| F6h | | Clear Huge Segment |
| F7h | | Boot to Full DOS |

Symptom-to-FRU error messages

LCD

| Symptom / Error | Action in Sequence |
|---|--|
| <ul style="list-style-type: none"> ▪ The LCD backlight doesn't work. ▪ The LCD is too dark. ▪ The LCD brightness cannot be adjusted. ▪ The LCD contrast cannot be adjusted. | <ul style="list-style-type: none"> ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Reconnect the LCD connectors. ▪ Test or replace the keyboard (if contrast and brightness function key doesn't work). ▪ Check the LCD inverter ID. ▪ Test or replace the LCD cable. ▪ Test or replace the LCD inverter. ▪ Test or replace the LCD. ▪ Test or replace the system board. |
| <ul style="list-style-type: none"> ▪ The LCD screen is unreadable. ▪ Missing pels in characters. ▪ The screen appears abnormal. ▪ The wrong color is displayed. | <ul style="list-style-type: none"> ▪ Reconnect the LCD connector. ▪ Check the LCD inverter ID. ▪ Test or replace the LCD cable. ▪ Test or replace the LCD inverter. ▪ Test or replace the LCD. ▪ Test or replace the system board. |
| The LCD is displaying extra horizontal or vertical lines. | <ul style="list-style-type: none"> ▪ Check the LCD inverter ID. ▪ Test or replace the LCD cable. ▪ Test or replace the LCD inverter. ▪ Test or replace the LCD. ▪ Test or replace the system board. |

Power

| Symptom / Error | Action in Sequence |
|---|---|
| The notebook shuts down during operation. | <ul style="list-style-type: none"> ▪ Test the power source (battery pack and power adapter). See "Testing the power system" on page 100. ▪ Test or replace the battery pack. ▪ Test or replace the power adapter. ▪ Test or replace the system board. |
| The notebook doesn't turn on. | <ul style="list-style-type: none"> ▪ Test the power source (battery pack and power adapter). See "Testing the power system" on page 100. ▪ Test or replace the battery pack. ▪ Test or replace the power adapter. ▪ Test or replace the system board. |
| The notebook doesn't turn off. | <ul style="list-style-type: none"> ▪ Test the power source (battery pack and power adapter). See "Testing the power system" on page 100. ▪ Press and hold the power button for more than four seconds. ▪ Test or replace the system board. |
| The battery can't be charged. | <ul style="list-style-type: none"> ▪ Test the battery pack. See "Check the battery pack" on page 101. ▪ Test or replace the battery pack. ▪ Test or replace the system board. |

Memory

| Symptom / Error | Action in Sequence |
|---|--|
| Memory count (size) appears different from actual size. | <ul style="list-style-type: none"> ▪ Run “Load Setup Defaults” using the BIOS Setup Utility, then reboot the notebook. ▪ Test or replace the SO-DIMM. ▪ Test or replace the system board. |

Sound

| Symptom / Error | Action in Sequence |
|--|---|
| No sound comes from the notebook when running Windows multimedia programs. | <ul style="list-style-type: none"> ▪ Reinstall the audio driver. ▪ Test or replace the speakers. ▪ Test or replace the system board. |
| The internal speakers make noise or emit no sound. | <ul style="list-style-type: none"> ▪ Test or replace the speakers. ▪ Test or replace the system board. |

Power management

| Symptom / Error | Action in Sequence |
|---|--|
| The notebook will not hibernate. | <ul style="list-style-type: none"> ▪ Test or replace the keyboard (if control is from the keyboard). ▪ Test or replace the hard disk drive. ▪ Test or replace the system board. |
| The system doesn't hibernate and emits four short beeps every minute. | <ul style="list-style-type: none"> ▪ Press Fn+O and see if the notebook enters hibernation mode. ▪ Test or replace the touchpad. ▪ Test or replace the keyboard. ▪ Check the hard disk connection to the system board. ▪ Test or replace the hard disk drive. ▪ Test or replace the system board. |
| The notebook doesn't enter standby mode after closing the LCD. | <ul style="list-style-type: none"> ▪ Make sure that the magnet is in the magnet holder. For more information, see “Replacing the LCD panel” on page 84. ▪ Test or replace the system board. |
| The system doesn't resume from hibernation mode. | <ul style="list-style-type: none"> ▪ Check the hard disk connection to the system board. ▪ Test or replace the hard disk drive. ▪ Test or replace the system board. |
| The system doesn't resume from standby mode after opening the LCD. | <ul style="list-style-type: none"> ▪ Make sure that the magnet is in the magnet holder. For more information, see “Replacing the LCD panel” on page 84. ▪ Test or replace the system board. |
| The battery fuel gauge in Windows doesn't go higher than 90%. | <ul style="list-style-type: none"> ▪ Remove the battery pack and let it cool for two hours. ▪ Refresh the battery (use only battery power until the notebook turns off, then charge the battery). ▪ Test or replace the battery pack. ▪ Test or replace the system board. |
| The system hangs intermittently. | <ul style="list-style-type: none"> ▪ Reconnect the hard disk drive and optical drive. ▪ Check the hard disk connection to the system board. ▪ Test or replace the system board. |

Devices

| Symptom / Error | Action in Sequence |
|--|--|
| System configuration does not match the installed devices. | <ul style="list-style-type: none"> ▪ Run "Load Setup Defaults" using the BIOS Setup Utility, then reboot the notebook. ▪ Reconnect the hard disk drive and optical drive. |
| The external display does not work correctly. | <ul style="list-style-type: none"> ▪ Press Fn+F4 repeatedly to switch between LCD, external display, and both displays. ▪ Test or replace the system board. |
| USB does not work correctly. | <ul style="list-style-type: none"> ▪ Test or replace the USB board. ▪ Test or replace the system board. |
| Printer problems. | <ul style="list-style-type: none"> ▪ Run the printer self-test. ▪ Reinstall the printer driver. ▪ Test or replace the printer cable. ▪ Test or replace the printer. ▪ Test or replace the system board. |

Keyboard and touchpad

| Symptom / Error | Action in Sequence |
|--|---|
| The keyboard (one or more keys) does not work. | <ul style="list-style-type: none"> ▪ Reconnect the keyboard cable. ▪ Test or replace the keyboard. ▪ Test or replace the system board. |
| The touchpad does not work. | <ul style="list-style-type: none"> ▪ Reconnect the touchpad cable. ▪ Test or replace the touchpad board. ▪ Test or replace the system board. |



Important

If you cannot find a symptom or an error in this list and the problem remains, see ["Undetermined problems" on page 115](#).

Intermittent problems

Intermittent system hang problems can be caused by a variety of reasons that have nothing to do with a hardware defect. These reasons include: cosmic radiation, electrostatic discharge, or software errors. FRU replacement should be considered only when a recurring problem exists.

- ▶ To analyze an intermittent problem:
 - 1 Run the advanced diagnostic test for the system board in loop mode at least ten times.
 - If any error is detected, replace the FRU.
 - If no error is detected, do not replace any FRU.
 - 2 Rerun the test to verify that there are no more errors.



Undetermined problems

If the diagnostic test may not identify which adapter or device failed, which installed devices are incorrect, whether a short circuit is suspected, or whether the system is inoperative. Use these procedures to isolate the failing FRU (do not isolate a non-defective FRU).



Important

Verify that all attached devices are supported by the notebook.



Important

Verify that the power supply being used at the time of the failure is operating correctly. (See ["Testing the power system" on page 100.](#))

▶ To isolate a failing FRU:

- 1 Turn off the notebook.
- 2 Visually check FRU parts for damage. If you identify any damage, replace the FRU.
- 3 Remove or disconnect all of the following devices:
 - Non-Acer devices
 - Printer, mouse, and other external devices
 - Battery pack
 - Hard disk drive(s)
 - SO-DIMM
 - Optical drive
- 4 Turn on the notebook.
- 5 Determine if the problem has changed.
 - If the problem does not recur, reconnect the removed devices one at a time until you find the failing FRU.
 - If the problem does recur, replace the following FRUs one at a time:
 - System board
 - LCD assembly



Important

Do not replace a non-defective FRU.

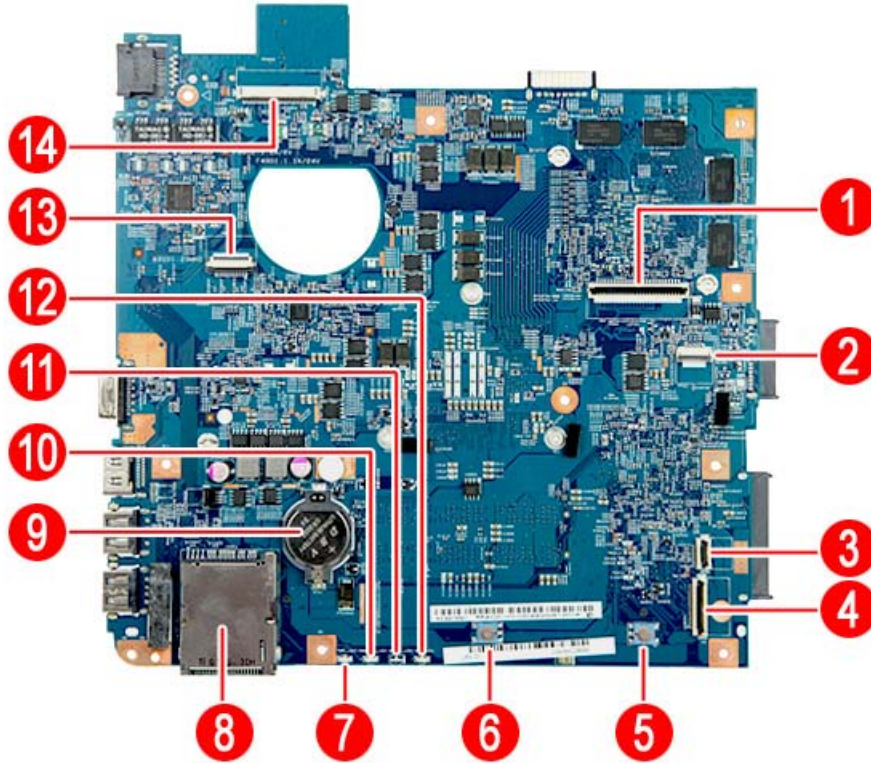
CHAPTER 5

Connector locations

- [System board layout](#)

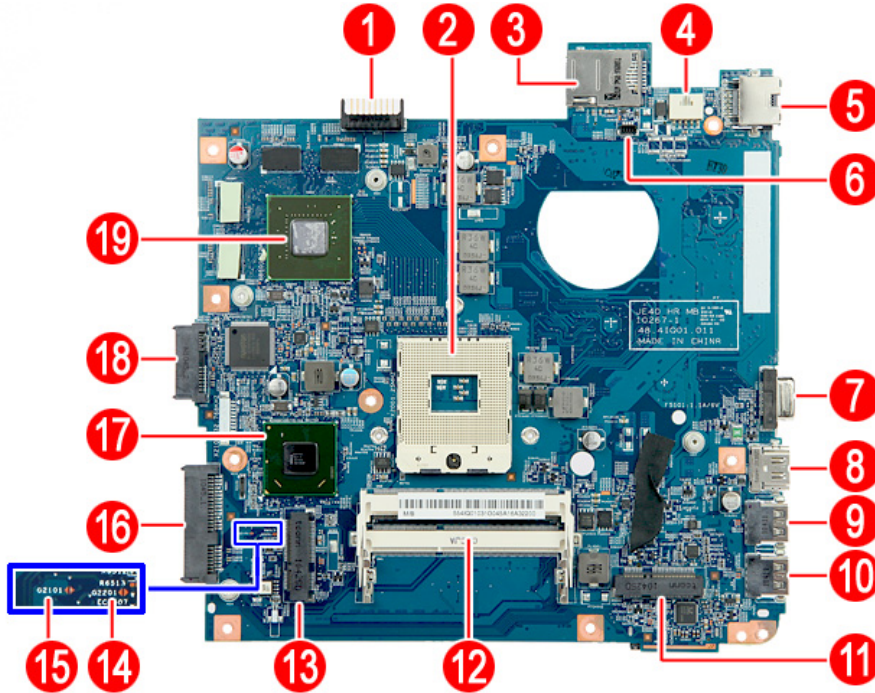
System board layout

Top view



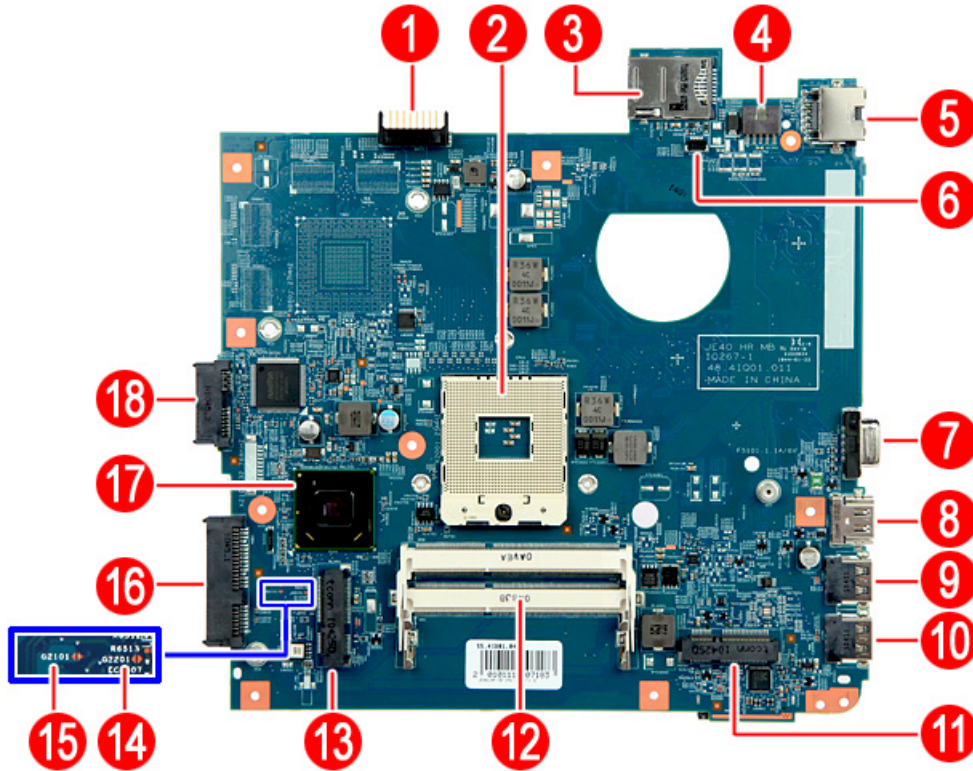
| Item | Code | Component | Item | Code | Component |
|------|----------|--------------------------------|------|---------------|--------------------------------------|
| 1 | KB1 | Keyboard cable connector | 8 | CARD1 | Memory card reader |
| 2 | TPAD1 | Touchpad board cable connector | 9 | RTC1 | Battery |
| 3 | USBCN2 | USB board cable connector | 10 | CHARGE_R_LED1 | Battery charge indicator |
| 4 | USBCN1 | USB board cable connector | 11 | MEDIA_LED1 | Hard drive activity indicator |
| 5 | SW_R1 | Right touchpad button | 12 | COM_LED1 | Bluetooth/Wireless network indicator |
| 6 | SW_L1 | Left touchpad button | 13 | PWRCN1 | Power button board cable connector |
| 7 | PWR_LED1 | Power indicator | 14 | LCD1 | LCD cable connector |

Bottom view - Discrete model



| Item | Code | Component | Item | Code | Component |
|------|-------|--------------------------|------|-------|------------------------------------|
| 1 | BAT1 | Battery connector | 11 | WWAN1 | 3G module slot |
| 2 | CPU1 | Processor socket | 12 | DM1-2 | Memory slots 1 and 2 |
| 3 | SIM1 | SIM card slot | 13 | WLAN1 | WLAN module slot |
| 4 | DCIN1 | DC power cable connector | 14 | G2201 | Clear password hardware gap |
| 5 | RJ45 | Ethernet jack | 15 | G2101 | Clear CMOS hardware gap |
| 6 | FAN1 | Fan connector | 16 | HDD1 | HDD connector |
| 7 | CRT1 | Monitor port | 17 | PCH1 | Mobile Intel HM65 Express Chipset |
| 8 | HDMI1 | HDMI out port | 18 | ODD1 | SATA optical drive connector |
| 9 | USB1 | USB port 1 | 19 | VGA1 | NVIDIA GeForce graphics controller |
| 10 | USB2 | USB port 2 | | | |

Bottom view - UMA model



| Item | Code | Component | Item | Code | Component |
|------|-------|--------------------------|------|-------|-----------------------------------|
| 1 | BAT1 | Battery connector | 11 | WWAN1 | 3G module slot |
| 2 | CPU1 | Processor socket | 12 | DM1-2 | Memory slots 1 and 2 |
| 3 | SIM1 | SIM card slot | 13 | WLAN1 | WLAN module slot |
| 4 | DCIN1 | DC power cable connector | 14 | G2201 | Clear password hardware gap |
| 5 | RJ45 | Ethernet jack | 15 | G2101 | Clear CMOS hardware gap |
| 6 | FAN1 | Fan connector | 16 | HDD1 | HDD connector |
| 7 | CRT1 | Monitor port | 17 | PCH1 | Mobile Intel HM65 Express Chipset |
| 8 | HDMI1 | HDMI out port | 18 | ODD1 | SATA optical drive connector |
| 9 | USB1 | USB port 1 | | | |
| 10 | USB2 | USB port 2 | | | |

CHAPTER 6

FRU (Field-Replaceable Unit) list

- [Introduction](#)
- [Exploded diagram](#)
- [FRU list](#)

Introduction

This chapter gives you the FRU (field-replaceable-unit) listing in global configurations of this model. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

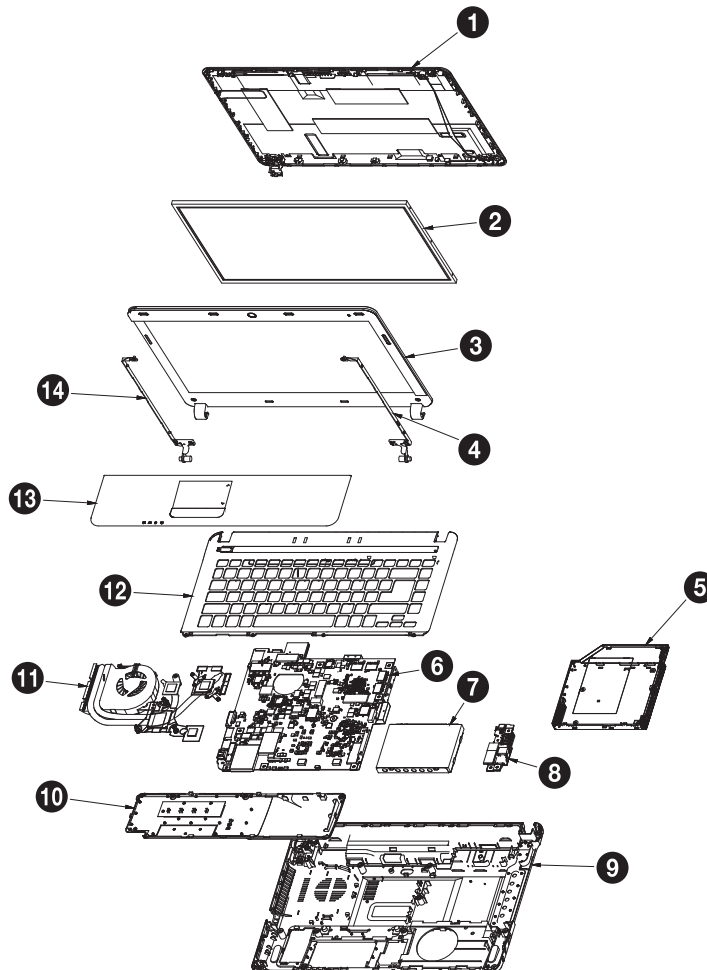
Please note that **WHEN ORDERING FRU PARTS**, you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted on the printed Service Guide. For **ACER AUTHORIZED SERVICE PROVIDERS**, your Acer office may have a **DIFFERENT** part number code from those given in the FRU list of this printed Service Guide. You **MUST** use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.



Important

To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded diagram






| Item | Component |
|------|-------------------------------|
| 1 | LCD assembly lid |
| 2 | LCD panel |
| 3 | LCD front panel |
| 4 | Right LCD panel hinge bracket |
| 5 | Optical drive |
| 6 | System board |
| 7 | Hard drive |
| 8 | USB board |
| 9 | Base enclosure |
| 10 | Bay cover |
| 11 | Cooling assembly |
| 12 | Keyboard frame |
| 13 | Palm rest |
| 14 | Right LCD panel hinge bracket |







FRU list

| Category | Part Name | Description | Part No. |
|---|---|---|--------------|
| Adapter | | | |
|  | ADAPTER 65W 19V 3PIN DELTA ADP-65JH DB A LV5 LED LF YEL- LOW | ADP 65W 19V 3P ADP-65JH DB A, | AP.0650A.017 |
| | ADAPTER 65W 19V DELTA ADP-65VH LV5 LOW PROFILE LED LF YELLOW UMA | ADP 65W 19V LV5 ADP-65VH BA LOW PROFILE | AP.06501.026 |
| | ADAPTER 65W 19V 3PIN LITEON PA-1650-22AC LV5 LED LF YELLOW | ADP 65W 19V 3P PA-1650-22AC LV | AP.06501.033 |
| | ADAPTER 65W 19V LITEON PA-1650-69AW LV5 LOW PROFILE LED LF YELLOW UMA | ADP LITEON 65W 19V PA-1650-69AW LV5 L | AP.06503.024 |
| | ADAPTER 65W 19V 3PIN HIPRO HP-A0652R3B 1LF LV5 LED LF YEL- LOW | ADP 65W 19V 3P HP-A0652R3B 1LF | AP.06503.029 |
| | ADAPTER 65W 19V CHICONY- POW CPA09-A065N1 LV5 LOW PROFILE LED LF YELLOW UMA | ADP 65W 19V LV5 CPA09-A065N1 LOW PROFILE | AP.0650A.012 |
| | ADAPTER DELTA 90W 19V 1.7X5.5X11 BLUE ADP-90CD DBH, LV5 LED LF | ADP 90W 19V 3P ADP-90CD DBH LV5 BLUE 1.7 | AP.0900A.005 |
| | ADAPTER 90W 19V 3PIN LITEON PA-1900-34AR LV5 LED LF BLUE DIS | ADP 90W 19V 3P PA-1900-34AR LV | AP.09001.031 |
| | ADAPTER 90W 19V 3PIN HIPRO HP-A0904A3 B1LF LV5 LED LF BLUE DIS | ADP 90W 19V 3P HP-A0904A3 B1LF | AP.09003.021 |
| Battery | | | |


| | | | |
|---|---|--------------------------------|--------------|
|  | BATTERY SANYO AS10D LI-ION 3S2P SANYO 6 CELL 4400MAH MAIN COMMON ID:AS10D31 | BTY PACK LI+ SANYO 6C 2.2AH | BT.0060G.001 |
| | BATTERY SONY AS10D LI-ION 3S2P SONY 6 CELL 4400MAH MAIN COMMON ID:AS10D41 | BTY PACK LI+ SONY 6C 2.2AH SON | BT.00603.111 |
| | BATTERY PANA- SONIC AS10D LI-ION 3S2P PANASONIC 6 CELL 4400MAH MAIN COMMON ID:AS10D51 | BTY PACK LI+ PANA 6C 2.2AH PAN | BT.00604.049 |
| | BATTERY SAM- SUNG AS10D LI-ION 3S2P SAM- SUNG 6 CELL 4400MAH MAIN COMMON ID:AS10D61 | BTY PACK LI+ SDI 6C 2.2AH SDI | BT.00605.062 |
| | BATTERY SIMPLO AS10D LI-ION 3S2P PANASONIC 6 CELL 4400MAH MAIN COMMON ID:AS10D71 | BTY PACK LI+ PANA 6C 2.2AH SMP | BT.00606.008 |
| | BATTERY SIMPLO AS10D LI-ION 3S2P LGC 6 CELL 4400MAH MAIN COMMON ID:AS10D73 | BTY PACK LI+ LG 6C 2.2AH SMP | BT.00607.125 |
| | BATTERY SIMPLO AS10D LI-ION 3S2P SAMSUNG 6 CELL 4400MAH MAIN COMMON ID:AS10D | BTY PACK LI+ SDI 6C 2.2AH SMP | BT.00607.126 |
| | BATTERY LGC AS10D LI-ION 3S2P LGC 6 CELL 4400MAH MAIN COMMON ID:AS10D81 | BTY PACK LI+ LG 6C 2.2AH LG | BT.00607.127 |

CHAPTER 6: FRU (Field-Replaceable Unit) list

| | | | |
|---|---|--|--------------|
| Power button board | POWER BUTTON BOARD | SJV40_HR POWER BD 10759-1 D | 55.WVH01.001 |
|  | | | |
| USB board | USB 2.0 BOARD | JE40_HR USB2.0 BD 10768-1 D | TBD |
|  | USB 3.0 BOARD | JE40_HR USB3.0 BD 10753-1 D | 55.RC901.002 |
| Wireless card | WIRELESS LAN BOARD LITEON REALTEK 8192SE BGN WN6603LH 2X2 BGN | WLAN 802.11N 2.4G 2X2 REALTEK RTL8192SE | NI.23600.065 |
|  | WIRELESS LAN BOARD FOX-CONN 802.11BGN BCM 43225 2X2 BGN (HM) T77H103.00 | WLAN 802.11BGN BCM 43225 BGN 2X2(HM) | NI.23600.066 |
| | WIRELESS LAN BOARD FOX-CONN Atheros HB97 2X2 BGN (HM) T77H167.07 | WLAN 802.11BGN 2X2 Atheros HB97 (HM) | 54.03346.481 |
| | WIRELESS LAN BOARD LITEON Atheros HB97 2X2 BGN HM WN6603AH | WLAN 802.11BGN Atheros HB97 2X2 BGN (HM) | 54.03346.411 |
| | WIRELESS LAN BOARD 802.11BG FOXCONN T77H121.01 Atheros AR9285(HB95) | WLAN 802.11BG Atheros AR9285(HB95) FOR | NI.23600.077 |
| Bluetooth module | BLUETOOTH BOARD FOX-CONN BCM2070 V2.1 T77H114.01 FOR BCM2070 BLUETOOTH CABLE 6PIN CONNECTOR | BT MODULE BCM2070 V2.1 FW 2.2.3. | BH.21100.007 |
|  | BLUETOOTH BOARD FOX-CONN BCM2070 V3.0 T77H114.01 FOR BCM2070 BLUETOOTH CABLE 6PIN CONNECTOR | BT MODULE BCM2070 V3.0 FW 2.2.3. | BH.21100.010 |









| | | | |
|--|--------------------------------------|-----------------------------------|--------------|
| Touchpad board  | TOUCHPAD BOARD SYNAPTIC TM-01465-001 | TOUCHPAD SYNAPTIC TM-01465-001 | 56.PUD01.001 |
| Cables | | | |
| USB board cable  | USB BOARD CABLE | C.A. USB BD FFC ,TR | 50.4IT02.021 |
| | USB BOARD CABLE | C.A. USB BD FFC ,JH | 50.4IT02.001 |
| | USB BOARD CABLE | C.A. USB BD FFC ,HB | 50.4IT02.011 |
| USB board FPC cable  | USB BOARD CABLE SUPPORT 3.0 | C.A. FPC FOR USB 3.0,CMI | 50.RC901.003 |
| Touchpad board cable  | TOUCHPAD BOARD CABLE | C.A. UCASE_TP_FCC_SJV40_TR | 50.4IR02.011 |
| | TOUCHPAD BOARD CABLE | C.A. UCASE_TP_BUTTON_FCC_SJV40_JH | 50.4IR02.001 |
| DC-in cable  | DC-IN CABLE 65W | C.A. DC-IN,65W,MEC | 50.4IT06.031 |
| | DC-IN CABLE 65W | C.A. DC-IN,65W,HL | 50.4IT06.001 |
| | DC-IN CABLE 65W | C.A.DC-IN,65W,HT | 50.4IT06.011 |
| | DC-IN CABLE 65W | C.A. DC-IN,65W,CMI | 50.4IT06.021 |
| | DC-IN CABLE 90W | C.A. DC-IN,WEC | 50.4IT01.031 |
| | DC-IN CABLE 90W | C.A. DC-IN,90W,HL | 50.4IT01.001 |
| | DC-IN CABLE 90W | C.A. DC-IN,90W,HT | 50.4IT01.011 |
| | DC-IN CABLE 90W | C.A. DC-IN,90W,CMI | 50.4IT01.021 |
| Bluetooth board cable  | BLUETOOTH BOARD CABLE 3.0 6PIN | C.A. HM40HR BT CABLE MEC | 50.4IT05.031 |
| | BLUETOOTH BOARD CABLE 3.0 6PIN | C.A. HM40HR BT CABLE HL | 50.4IT05.001 |
| | BLUETOOTH BOARD CABLE 3.0 6PIN | C.A. HM40HR BT CABLE HT | 50.4IT05.011 |
| | BLUETOOTH BOARD CABLE 3.0 6PIN | C.A. HM40HR BT CABLE YY | 50.4IT05.021 |


CHAPTER 6: FRU (Field-Replaceable Unit) list

| | | | |
|---|--|--------------------------------|--------------|
| Power cord  | POWER CORD 10A 250V SWISS | CODE SWISS 2.5A 250V 3P BK | 27.01518.691 |
| | POWER CORD 10A 250V 3PIN SWISS BK | CODE 10A 250V 3P SWISS BK | 27.01518.581 |
| | POWER CORD 10A 250V ARGEN- TINE | CORD ARGENTINE,10A 250V3G,1.8M | 27.01518.0U1 |
| | POWER CORD 10A 125V US | CODE US 7A 125V BK | 27.01518.641 |
| | POWER CORD 10A 125V 3PIN US BK | CODE 10A 125V 3P US BK | 27.01518.521 |
| | POWER CORD 7A 250V 2PIN KOREAN | CORD 7A250V 2P 1830 KOREAN | 27.01518.531 |
| | POWER CORD 3A 250V 3PIN UK | CODE UK 2.5A 250V 3P BK | 27.03118.001 |
| | POWER CORD 5A 250V 3PIN UK BK | CODE 5A 250V 3P UK BK | 27.01518.541 |
| | POWER CORD 7A 125V 2PIN JAPAN | CODE JAPAN 7A 125V 2P BK | 27.01518.551 |
| | POWER CORD 10A 3PIN BK DEN- MARK | CODE DENMARK 2.5A 250V 3P BK | 27.01518.671 |
| | POWER CORD 10A 250V 3PIN DENMARK BK | CODE 10A 250V 3P DENMARK BK | 27.01518.561 |
| | POWER CORD 10A 250V 3PIN BK SOUTH AFRICA | CODE SOUTH AFRICA 16A 250V BK | 27.01518.681 |
| | POWER CORD 16A 250V SOUTH AFRICA BK | CODE 16A 250V SOUTH AFRICA BK | 27.01518.571 |
| | POWER CORD 10A 250V 3PIN CHINA | CORD CHINA 10A 250V 3P | 27.01518.701 |
| | POWER CORD 10A 250V 3PIN CHINA BK | CORD 10A 250V 3P CHINA BK | 27.01518.591 |
| | POWER CORD 250V 3PIN EUR BK | CORD EUR 250V 3P BK | 27.01518.731 |
| | POWER CORD 16A 250V 3PIN EUR BK | CORD 16A 250V 3P EUR BK | 27.01518.601 |
| POWER CORD 10A 250V 3PIN ITALY | CORD ITALY 10A 250V 3P BK | 27.01518.711 | |

| | | | |
|---|---|--------------------------------|--------------|
| | POWER CORD 10A 250V 3PIN ITALY BK | CORD 10A 250V 3P ITALY BK | 27.01518.611 |
| | POWER CORD 2.5A 250V AUS- TRALIA | CORD 2.5A 250V AUSTRALIA BK | 27.01518.621 |
| | POWER CORD 2.5A 250V SOUTH AFRICA BK (INDIA) | CORD 2.5A 250V SOUTH AFRICA BK | 27.01518.721 |
| | POWER CORD 10A 250V SOUTH AFRICA BK (INDIA) | CORD 6A 250V SOUTH AFRICA BK | 27.01518.631 |
| | POWER CORD 7A 125V 2PIN JAPAN BK | CODE 7A 125V 2P JAPAN BK | 27.01518.661 |
| | POWER CORD 250V 10A 3PIN ISRAEL | CORD 250V 10~16A 3P ISRAEL | 27.01518.761 |
| | POWER CORD 2.5A 125V USA | CORD USA/W CNS 2.5A 125V 8121- | 27.01518.A11 |
| | POWER CORD 2.5A 125V 1.8M BLACK TAIWAN- ESE | POWER CORD TAIWANESE BLACK,1.8 | 27.01518.781 |
| | POWER CORD 10A 250V 1.8M BRAZIL BLK | POWER CORD BRAZIL,BLK,1.8M | 27.01518.A41 |
| | POWER CORD ACA / ACNZ | POWER CODE ACA / ACNZ ANNIE | 27.03218.051 |
| | POWER CORD 7.5A 250V 3P AUS- TRALIA BK | CODE 7.5A 250V 3P AUSTRALIA BK | 27.03218.021 |
| | POWER CORD 7A 125V 2PIN JAPAN | CODE 7A 125V JAPAN 2PIN BK | 27.03518.161 |
| | POWER CORD 10A 250V 3PIN 1.83M BRAZIL BLACK | CORD 1.83M BRAZIL BLK | 27.01518.H81 |
| Power button board cable | POWER BUTTON BOARD CABLE | C.A. UCASE_POWER_FCC_SJV40 | 50.4IR04.001 |
|  | POWER BUTTON BOARD CABLE | SJV40_POWER_PCB_FFC_SECOND | 50.4IR01.001 |

CHAPTER 6: FRU (Field-Replaceable Unit) list

| | | | |
|---|--|------------------------------------|--------------|
|  | LED LCD/CCD CABLE | C.A. LCD CABLE JE40 HR | 50.4IQ01.031 |
| | LED LCD/CCD CABLE | C.A. LCD CABLE_HL JE40 HR | 50.4IQ01.001 |
| | LED LCD/CCD CABLE | C.A. LCD CABLE_HC JE40 HR | 50.4IQ01.011 |
| | LED LCD/CCD CABLE | C.A. LCD CABLE_YY JE40 HR | 50.4IQ01.021 |
| Case/Cover/Bracket Assembly | | | |
|  | SD DUMMY CARD | DUMMY CARD SJV40 | 42.WVH01.002 |
|  | LOWER CASE | 60 L-CAS ASSY SJV40HR NON 3G | 60.WVH01.001 |
|  | UNITLOAD COVER | ASSY_60_BIG_DOOR_SJV40 | 42.WVH01.001 |
|  | KEYBOARD FRAME W/ SPEAKER | ASSY 60 UCASE SJV40 | 60.WVH01.002 |
|  | PALMREST BLACK | 60_SJV40HR_PALMREST_ASSY_LRON_GRAY | 60.WVH01.003 |
|  | KEYBOARD SUPPORT W/ POWER BUTTON BOARD CABLE | ASSY _KB_BAT_SJV40 | 60.WVH01.004 |
|  | DVD-RW SUPER-MULT BEZEL | ASSY SJV40 60 ODD BEZEL | 42.WVH01.003 |
| | BLUE-RAY COMBO BEZEL | ASSY_60_ODD_SJV40_BLUE_RAY | 42.WVH01.004 |

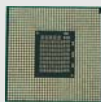
| | | | |
|--|--|--------------------------------------|--------------|
| ODD bracket  | ODD BRACKET | BRKT_ODD_BKT_SJV40 | 33.4IR03.021 |
| | ODD BRACKET | BRKT ODD BKT MACKING | 33.4IR03.001 |
| | ODD BRACKET | BRKT ODD BKT HON WIN | 33.4IR03.011 |
| HDD bracket  | HDD BRACKET | ASSY 60 HDD BKT JE40 HR | 60.4IQ19.021 |
| | HDD BRACKET | ASSY 60 HDD BKT JE40 HR MACKING | 60.4IQ19.001 |
| | HDD BRACKET | ASSY 60 HDD BKT JE40 HR HON WIN | 60.4IQ19.011 |
| LCD panel right bracket  | LCD HINGE RIGHT | HINGE LCD R SJV40 | 34.4IR06.021 |
| | LCD HINGE RIGHT | HINGE SJV40 R JL | 34.4IR06.001 |
| | LCD HINGE RIGHT | HINGE SJV40 R XH | 34.4IR06.011 |
| LCD panel left bracket  | LCD HINGE LEFT | HINGE LCD L SJV40 | 34.4IR07.021 |
| | LCD HINGE LEFT | HINGE SJV40 L JL | 34.4IR07.001 |
| | LCD HINGE LEFT | HINGE SJV40 L XH | 34.4IR07.011 |
| LCD front panel  | LCD BEZEL 14" W/CAMERA HOLE | 60 ASSY LCD BEZEL SJV40 | 60.WVH01.005 |
| LCD assembly lid  | LED LCD COVER 14" IMR BLACK W/ANTENNA*2 & MICROPHONE | ASSY LCD PANEL NON 3G SJV40 | 60.4IR12.021 |
| | LED LCD COVER 14" IMR BLACK W/ANTENNA*2 & MICROPHONE | 60 PANEL NON 3G SJV40 PB BLACK SIPIX | 60.4IR12.001 |
| Speaker | | | |
|  | SPEAKER | SPEAKER YG JE40 HR | 23.40908.001 |
| | SPEAKER | SPEAKER FG JE40 HR | 23.40909.001 |
| ODD drive | | | |
|  | BLU-RAY COMBO MODULE 4X SATA | ODD NBDCB4XS FOR SJV40_HRP | 6M.WVH01.002 |
| | DVD-RW SUPER MULT 8X MODULE | ODD NSM8XS FOR SJV40_HRP | 6M.WVH01.001 |

CHAPTER 6: FRU (Field-Replaceable Unit) list


| | | |
|--|---|---------------------|
| <p>ODD SONY BD COMBO 12.7MM TRAY DL 4X BC-5540H LF+HF W/O BEZEL SATA (HF + WINDOWS 7)</p> | <p>BD COMBO 12.7 TL HF SONY BC-5540H</p> | <p>KO.0040E.005</p> |
| <p>ODD TOSHIBA SUPER-MULTI DRIVE 12.7MM TRAY DL 8X TS-L633F LF W/O BEZEL SATA (HF + WINDOWS 7)</p> | <p>ODD DVDRW 12.7 TL HF TSST TS-L633F</p> | <p>KU.0080F.014</p> |
| <p>ODD PIONEER SUPER-MULTI DRIVE 12.7MM TRAY DL 8X DVR-TD10RS LF W/O BEZEL 1.00 SATA</p> | <p>ODD DVDRW 12.7 TL HF PIONEER DVR-TD10RS</p> | <p>KU.00801.040</p> |
| <p>ODD PANASONIC SUPER-MULTI DRIVE 12.7MM TRAY DL 8X UJ890A LF W/O BEZEL SATA HF+WINDOWS 7</p> | <p>ODD SM 12.7 HF+W7 PCC UJ890A</p> | <p>KU.00805.049</p> |
| <p>ODD PANASONIC SUPER-MULTI DRIVE 12.7MM TRAY DL 8X UJ8A0 LF W/O BEZEL SATA (HF + WINDOWS 7) FOXCONN YEN-TAI FACOTRY</p> | <p>ODD SM 12.7 PANASONIC UJ8A0 W/O BZL WIN7</p> | <p>KU.00807.070</p> |
| <p>ODD HLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X GT32N (R5-2) LF W/O BEZEL SATA WITH RENESAS SOLUTION + PCC LD (HF + WINDOWS 7)</p> | <p>ODD SM 12.7 HF+W7 HLDS GT32N</p> | <p>KU.00807.075</p> |
| <p>ODD HLDS SUPER-MULTI DRIVE 12.7MM TRAY DL 8X GT34N LF W/O BEZEL SATA ZERO POWER SUPPORTED, PCC LD (HF + WINDOWS 7)</p> | <p>ODD DVDRW 12.7 TL HF+W7 HLDS GT34N</p> | <p>KU.0080D.055</p> |

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| | ODD PLDS SUPER-MULTI DRIVE 12.7MM TRAY PLDS DS-8A5SH LF W/O BEZEL SATA FOR HF+WINDOWS7 | ODD SM SATA 12.7 TL PLDS DS-8A5SH | KU.0080D.057 |
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CPU/Processor


| | | | |
|---|--|--|---------------|
|  | CPU INTEL CORE I3 I3-2310M PGA 2.1G 35W 2/4 | IC CPU SANDY BRIDGE I3-2310M 2.1G 35W PG | KC.23101.DM P |
| | CPU INTEL CORE I5 I5-2410M PGA 2.3G 35W 2/4 | IC CPU SANDY BRIDGE I5-2410M 2.3G 35W PG | KC.24101.DM P |
| | CPU INTEL CORE I5 I5-2520M PGA 2.5G 35W 2/4 | IC CPU SANDY BRIDGE I5-2520M 2.5G 35W PG | KC.25201.DM P |
| | CPU INTEL CORE I5 I5-2540M PGA 2.6G 35W 2/4 | IC CPU SANDY BRIDGE I5-2540M 2.6G 35W PG | KC.25401.DM P |
| | CPU INTEL CORE I7 I7-2620M PGA 2.7G 35W 2/4 | IC CPU SANDY BRIDGE I7-2620M 2.7G 35W PG | KC.26201.DM P |
| | CPU INTEL CORE I7 I7-2630QM PGA 2.0G 45W 4/8 | IC CPU SANDY BRIDGE I7-2630QM 2.0G 45W P | KC.26301.QM P |
| | CPU INTEL CORE I7 I7-2720QM PGA 2.2G 45W 4/8 | IC CPU SANDY BRIDGE I7-2720QM 2.2G 45W P | KC.27201.QM P |
| | CPU INTEL CORE I7 I7-2820QM PGA 2.3G 45W 4/8 | IC CPU SANDY BRIDGE I7-2820QM 2.3G 45W P | KC.28201.QM P |

HDD/Hard disk drive

| | | | |
|---|--|--------------------------------|--------------|
|  | HDD MODULE 320G 5400RPM 2.5" SATA | HDD 320GB5.4KS FOR SJV40_HRP | |
| | HDD 320GB 5400RPM 2.5" SATA TOSHIBA MK3265GSX 8MB 68P LF F/W:GJ001J | HDD 320GB TOSHIBA MK3265GSX | KH.32007.008 |
| | HDD 320GB 5400RPM 2.5" SATA HGST HTS545032B9A300 PANTHER B LF F/W:C60F DISK IMBALANCE CRITERIA = 0.014G-CM | HDD 320GB HGST HTS545032B9A300 | KH.32004.004 |

CHAPTER 6: FRU (Field-Replaceable Unit) list

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| HDD MODULE 320GB5.4KS_4K 5400RPM 2.5" SATA | HDD 320GB5.4KS_4K FOR SJV40_HRP | |
| HDD WD 2.5" 5400RPM 320GB WD3200BPVT-22Z EST0, ML320S, 4K DRIVE SATA 8MB LF F/W: 01.01A01 | HDD 320GB WD WD3200BPVT-22ZEST0 AF 5.4K | KH.32008.022 |
| HDD MODULE 320G 5400RPM 7.0MM 2.5" SATA | HDD N320GB5.4KS7.0 FOR SJV40_HRP | |
| HDD HGST 2.5" 5400RPM 320GB HTS543232A7A38 4,0J11523, EAGLE B7, 320G/P SATA LF+HF F/W:A60W | HDD 320GB HGST HTS543232A7A384 7mmH 5.4K | KH.32007.013 |
| HDD MODULE 500G 5400RPM 2.5" SATA | HDD 500GB5.4KS FOR SJV40_HRP | |
| HDD SEAGATE 2.5" 5400RPM 500GB ST9500325AS,9H H134-189, WYATT WITH NEW PCB SATA 8MB LF F/W:0001SDM1 | HDD 500GB SEAGATE ST9500325AS 5400RPM | KH.50008.021 |
| HDD 2.5" 5400RPM 500GB TOSHIBA MK5065GSX LIBRA SATA LF F/WGJ001J | HDD 500GB TOSHIBA MK5065GSX | KH.50001.017 |
| HDD HGST 2.5" 5400RPM 500GB HTS545050B9A30 0 PANTHER B SATA LF F/W:C60F DISK IMBALANCE CRITERIA = 0.014G-CM | HDD 500GB HGST HTS545050B9A300 | KH.50004.002 |
| HDD WD 2.5" 5400RPM 500GB WD5000BPVT-22H XZT1,ML375_AF, 4K DRIVE SATA 8MB LF+HF F/W:01.01A01 | HDD 500GB WD WD5000BPVT-22HXZT1 5.4K AF | KH.50007.010 |
| HDD MODULE 640G 5400RPM 2.5" SATA | HDD 640GB5.4KS FOR SJV40_HRP | |

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| | HDD 640GB 5400RPM 2.5" SATA MK6465GSX LF CAPRICORN BS F/W:GJ001J | HDD 640GB TOSHIBA MK6465GSX | KH.64008.005 |
| | HDD WD 2.5" 5400RPM 640GB WD6400BPVT-22H XZT1, ML375M SATA 8MB LF F/W: 01.01A01 | HDD 640GB WD WD6400BPVT-22HXZT1 5.4K AF | KH.64004.001 |
| | HDD MODULE 750G 5400RPM 2.5" SATA | HDD 750GB5.4KS FOR SJV40_HRP | |
| | HDD SEAGATE 2.5" 5400RPM 750GB ST9750423AS,9Z W14G-188, DESARU5, 375G/P. SATA 8MB LF+HF F/W:0001SDM1 | HDD 750GB SEAGATE ST9750423AS 5400RPM | KH.75008.009 |
| | HDD TOSHIBA 2.5" 5400RPM 750GB MK7559GSX, 375G/P, CAPRI- CORN BS, 4K DRIVE SATA 8MB LF+HF F/W:GNDD3J | HDD 750GB TOSHIBA MK7559GSX 5.4K 4Ksecto | KH.75001.011 |
| | HDD HGST 2.5" 5400RPM 750GB HTS547575A9E38 4, 0J15083, JET B, 375G/P SATA 8MB LF F/W:DA3872 | HDD 750GB HGST HTS547575A9E384 5400RPM | KH.75004.001 |
| | HDD WD 2.5" 5400RPM 750GB WD7500BPVT-22H XZT1, ML375M, 4K DRIVE SATA 8MB LF F/W:01.01A01 | HDD 750GB WD WD7500BPVT-22HXZT1 4K 5.4KR | KH.75007.004 |
| Heatsink/Cooling assembly | | | |
| Cooling assembly UMA model | CPU HEATSINK W/FAN FOR UMA | ASSY THM UMA 35W SUNON JE40HR | 60.RC801.001 |
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CHAPTER 6: FRU (Field-Replaceable Unit) list

Cooling assembly
Discrete model

CPU HEATSINK
W/FAN FOR DIS

ASSY THM DIS 45W SUNON JE40HR

60.RC901.003



Keyboard



KEYBOARD
GATEWAY
GF4T_G11B GF4T
INTERNAL 14
STANDARD 86KS
BLACK ARABIC
TEXTURE

KB MP-10K23A0-442 ARABIC GF4T

90.4IR07.S0A

KEYBOARD
GATEWAY
GF4T_G11B GF4T
INTERNAL 14
STANDARD 86KS
BLACK ARABIC
TEXTURE

KB V121630AS1 AR ARABIC GF4T

90.4IR07.C0A

KEYBOARD
GATEWAY
GF4T_G11B GF4T
INTERNAL 14
STANDARD 87KS
BLACK BELGIUM
TEXTURE

KB MP-10K26B0-442 BELGIUM GF4T

90.4IR07.S1A

KEYBOARD
GATEWAY
GF4T_G11B GF4T
INTERNAL 14
STANDARD 87KS
BLACK BELGIUM
TEXTURE

KB V121630AK1 BE BELGIUM GF4T

90.4IR07.C1A

KEYBOARD
GATEWAY
GF4T_G11B GF4T
INTERNAL 14
STANDARD 87KS
BLACK BRAZILIAN
PORTUGUESE
TEXTURE

KB MP-10K26PA-442 BRAZILIAN GF4T

90.4IR07.S1B

KEYBOARD
GATEWAY
GF4T_G11B GF4T
INTERNAL 14
STANDARD 87KS
BLACK BRAZILIAN
PORTUGUESE
TEXTURE

KB V121630AK1 BR BRAZIL/PORTU-
GUESE GF4T

90.4IR07.C1B

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|---|---------------------------------------|--------------|
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK CZ/SK TEXTURE | KB MP-10K26CS-442 CZ/SK GF4T | 90.4IR07.S13 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK CZ/SK TEXTURE | KB V121630AK1 CS CZECH/SLOVAK GF4T | 90.4IR07.C13 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK DANISH TEXTURE | KB MP-10K26DK-442 DANISH GF4T | 90.4IR07.S0D |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK DANISH TEXTURE | KB V121630AK1 DM DANISH GF4T | 90.4IR07.C0D |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK GERMAN TEXTURE | KB MP-10K26D0-442 GERMAN GF4T | 90.4IR07.S0G |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK GERMAN TEXTURE | KB V121630AK1 GR GERMAN GF4T | 90.4IR07.C0G |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK US INTER- NATIONAL TEX- TURE | KB MP-10K23U4-442 US-INT GF4T | 90.4IR07.S1D |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK US INTER- NATIONAL TEX- TURE | KB V121630AS1 UI US-INT GF4T | 90.4IR07.C1D |

CHAPTER 6: FRU (Field-Replaceable Unit) list

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| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SPANISH TEXTURE | KB MP-10K26E0-442 SPANISH GF4T | 90.4IR07.S0S |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SPANISH TEXTURE | KB V121630AK1 SP SPANISH GF4T | 90.4IR07.C0S |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK FR/ARA- BIC TEXTURE | KB MP-10K26AF-442 FR/ARABIC GF4T | 90.4IR07.S2A |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK FR/ARA- BIC TEXTURE | KB V121630AK1 FA FRENCH/ARABIC GF4T | 90.4IR07.C2A |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK FRENCH TEXTURE | KB MP-10K26F0-442 FRENCH GF4T | 90.4IR07.S0F |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK FRENCH TEXTURE | KB V121630AK1 FR FRENCH GF4T | 90.4IR07.C0F |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK GREEK TEXTURE | KB MP-10K23GR-442 GREEK GF4T | 90.4IR07.S0L |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK GREEK TEXTURE | KB V121630AS1 GK GREEK GF4T | 90.4IR07.C0L |

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| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK HUNGAR- IAN TEXTURE | KB MP-10K26HU-442 HUNGARIAN GF4T | 90.4IR07.S0Q |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK HUNGAR- IAN TEXTURE | KB V121630AK1 HG HUNGARIAN GF4T | 90.4IR07.C0Q |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK US INTER- NATIONAL W/ HEBREW TEX- TURE | KB MP-10K23HB-442 US-I/HEBR GF4T | 90.4IR07.S0H |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK US INTER- NATIONAL W/ HEBREW TEX- TURE | KB V121630AS1 HB US INT/HEBREW GF4T | 90.4IR07.C0H |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK ITALIAN TEXTURE | KB MP-10K26I0-442 ITALIAN GF4T | 90.4IR07.S0E |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK ITALIAN TEXTURE | KB V121630AK1 IT ITALIAN GF4T | 90.4IR07.C0E |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 91KS BLACK JAPANESE TEXTURE | KB KB MP-10K20J0-442 JAPANESE GF4T | 90.4IR07.S0J |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 91KS BLACK JAPANESE TEXTURE | KB V121630AJ1 JA JAPANESE GF4T | 90.4IR07.C0J |

CHAPTER 6: FRU (Field-Replaceable Unit) list

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| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK KOREAN TEXTURE | KB MP-10K23K0-442 KOREAN GF4T | 90.4IR07.S0K |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK KOREAN TEXTURE | KB V121630AS1 KR KOREAN GF4T | 90.4IR07.C0K |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK NORWE- GIAN TEXTURE | KB MP-10K26N0-442 NORWEGIAN GF4T | 90.4IR07.S0N |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK NORWE- GIAN TEXTURE | KB V121630AK1 NW NORWEGIAN GF4T | 90.4IR07.C0N |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK NORDIC TEXTURE | KB MP-10K26DN-442 NORDIC GF4T | 90.4IR07.S1K |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK NORDIC TEXTURE | KB V121630AK1 NE NORDIC GF4T | 90.4IR07.C1K |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK PORTU- GUESE TEXTURE | KB MP-10K26P0-442 PORTUGUESE GF4T | 90.4IR07.S06 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK PORTU- GUESE TEXTURE | KB V121630AK1 PO PORTUGUESE GF4T | 90.4IR07.C06 |

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| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK RUSSIAN TEXTURE | KB MP-10K23SU-442 RUSSIAN GF4T | 90.4IR07.S0R |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK RUSSIAN TEXTURE | KB V121630AS1 RU RUSSIAN GF4T | 90.4IR07.C0R |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SLO/CRO TEXTURE | KB MP-10K26SA-442 SLO/CRO GF4T | 90.4IR07.S1F |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SLO/CRO TEXTURE | KB V121630AK1 SV SLOVENIA GF4T | 90.4IR07.C1F |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SWEDEN TEXTURE | KB MP-10K26S0-442 SWEDEN GF4T | 90.4IR07.S0W |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SWEDEN TEXTURE | KB V121630AK1 SD SWEDEN GF4T | 90.4IR07.C0W |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SWISS/G TEXTURE | KB MP-10K26CH-442 SWISS/G GF4T | 90.4IR07.S00 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK SWISS/G TEXTURE | KB V121630AK1 SW SWISS GF4T | 90.4IR07.C00 |

CHAPTER 6: FRU (Field-Replaceable Unit) list

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| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK THAILAND TEXTURE | KB MP-10K23T0-442 THAILAND GF4T | 90.4IR07.S03 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK THAILAND TEXTURE | KB V121630AS1 TI THAILAND GF4T | 90.4IR07.C03 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK TURKISH TEXTURE | KB MP-10K26TQ-442 TURKISH GF4T | 90.4IR07.S0T |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK TURKISH TEXTURE | KB V121630AK1 TR TURKISH GF4T | 90.4IR07.C0T |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK CHINESE TEXTURE | KB MP-10K23RC-442 CHINESE GF4T | 90.4IR07.S02 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 86KS BLACK CHINESE TEXTURE | KB V121630AS1 CH CHINESE GF4T | 90.4IR07.C02 |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK US W/ CANADIAN FRENCH TEX- TURE | KB MP-10K26CU-442 USW/ CAN FREN GF4T | 90.4IR07.S2M |
| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK US W/ CANADIAN FRENCH TEX- TURE | KB V121630AK1 EF FRENCH/CANA- DIA/ENG GF4T | 90.4IR07.C2M |

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| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK UK TEX- TURE | KB MP-10K26GB-442 UK GF4T | 90.4IR07.S0U |
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| KEYBOARD GATEWAY GF4T_G11B GF4T INTERNAL 14 STANDARD 87KS BLACK UK TEX- TURE | KB V121630AK1 UK UK GF4T | 90.4IR07.C0U |
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LCD



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| LED LCD MODULE 14" WXGA GLARE IMR BLACK W/1.3M CAM- ERA&ANTENNA*2 & LOGO PLATE FOR PACKARD BELL | LCD NLED 14" WXGAG ANT*2 Ckk | 6M.BRT01.003 |
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| LED LCD AUO 14" WXGA+ GLARE B140XW01 V8 0A LF 220NIT 8MS 500:1 | LCD 14"HD AU B140XW01 V8 G | LK.1400D.008 |
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| LED LCD SAM- SUNG 14" WXGA GLARE LTN140AT01-G04 LF 220NIT 8MS 500:1 | LCD 14"HD SEC LTN140AT01-G04 | LK.14005.010 |
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| LED LCD LPL 14" WXGA GLARE LP140WH1-TLA2 LF 220NIT 8MS 500:1 | LCD 14"HD LG LP140WH1-TLA2 LED | LK.14006.015 |
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| LED LCD LPL 14" WXGA GLARE LP140WH4-TLC1 LF 220NIT 16MS | LCD 14" WXGA LG LP140WH4-TLC1 | LK.14008.004 |
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| LED LCD CMI 14" WXGA GLARE BT140GW01 V6 LF 220NIT 8MS 600:1 | LCD 14"WXGA CMI BT140GW01 G | LK.14008.009 |
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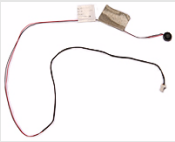
Camera




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| CAMERA 1.3M LIT- EON 10P2TF103 | CAMERA 1.3M 10P2TF103 LITEON | 56.18012.721 |
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| CAMERA 1.3M SUYIN HF1316-P80A-SS0 3 | CAMERA 1.3M HF1316-P80A-SS03 SUYIN | 56.18006.721 |
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Microphone

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|---|------------|---------------------------------|--------------|
|  | MICROPHONE | MIC CABLE JE40 HR XING MENG | 23.42362.021 |
| | MICROPHONE | MICROPHONE CABLE JE40 HR HIT | 23.42362.001 |
| | MICROPHONE | MICROPHONE CABLE JE40 HR GETTOP | 23.42362.011 |

Mainboard

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|---|---|-----------------------------------|--------------|
|  | MAINBOARD SJV40_HR ENNS11HR_UMA INTEL HM65 LF W/RTC BATTERY & W/O CPU & MEMORY NON-3G | SJV40_HR MB UMA NON3G PB | MB.BRV01.001 |
| | MAINBOARD SJV40_HR ENNS11HR_N12P GS 1GB VRAM INTEL HM65 LF W/RTC BATTERY & W/O CPU & MEMORY NON-3G | SJV40_HR MB 12PGS/HY8/1G NON3G PB | MB.BRT01.001 |

Memory

| | | | |
|--|--|---|--------------|
|  | SODIMM 1GB DDRIII 1333MHZ KINGSTON ACR128X64D3S13 33C9 LF 128*8 0.065UM | SODIMM 1G ACR128X64D3S1333C9 | KN.1GB0H.017 |
| | SODIMM 1GB DDRIII 1333MHZ SAMSUNG M471B2873FHS-C H9 LF 128*8 46NM | SODIMM 1G M471B2873FHS-CH9 | KN.1GB07.004 |
| | SODIMM 1GB DDRIII 1333MHZ A-DATA AD7311A0873EU LF 128*8 0.065UM | SODIMM 1G AD7311A0873EU DDR3 1333MHZ | KN.1GB0B.035 |
| | SODIMM 1GB DDRIII 1333MHZ UNIFOSA GU672203EP0200 LF 128*8 0.065UM | SODIMM 1G GU672203EP0200 | KN.1GB0C.009 |
| | SODIMM 2GB DDRIII 1333MHZ NT2GC64B88B0N S-CG LF 256*8 0.055UM | SODIMM 2G NT2GC64B88B0NS-CG | KN.2GB0G.018 |

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| | SODIMM 2GB DDRIII 1333MHZ KINGSTON ACR256X64D3S13 33C9 LF 128*8 0.065UM | SODIMM 2G ACR256X64D3S1333C9 | KN.2GB03.021 |
| | SODIMM 2GB DDRIII 1333MHZ ELPIDA EBJ21UE8BFU0-D J-F LF 128*8 0.065UM | SODIMM 2G EBJ21UE8BFU0-DJ-F | KN.2GB07.004 |
| | SODIMM 2GB DDRIII 1333MHZ M471B5773CHS-C H9 LF 256*8 46NM | SODIMM 2G M471B5773CHS-CH9 | KN.2GB09.009 |
| | SODIMM 2GB DDRIII 1333MHZ A-DATA AD731B1674EU LF 128*8 0.065UM | SODIMM 2G AD731B1674EU DDR3 1333MHZ | KN.2GB0B.026 |
| | SODIMM 2GB DDRIII 1333MHZ HYNIX HMT325S6BFR8C- H9 LF 256*8 46NM | SODIMM 2G HMT325S6BFR8C-H9N0 | KN.2GB0C.006 |
| | SODIMM 4GB DDRIII 1333MHZ ELPIDA EBJ41UF8BAS0-D J-F LF 256*8 0.055UM | SODIMM 4G EBJ41UF8BAS0-DJ-F | KN.4GB0G.003 |
| | SODIMM 4GB DDRIII 1333MHZ SAMSUNG M471B5273CH0-C H9 LF 256*8 46NM | SODIMM 4G M471B5273CH0-CH9 | KN.4GB09.001 |
| | SODIMM 4GB DDRIII 1333MHZ HYNIX HMT351S6AFR8C- H9N0 LF 256*8 0.055UM | SODIMM 4G HMT351S6AFR8C-H9N0 | KN.4GB0B.010 |
| Miscellaneous | | | |
|  | LCD BEZEL SCREW MYLAR | JM31 BEZLESCREWMYLAR JM | 40.4HL07.001 |
| | LCD BEZEL SCREW MYLAR | JM31_CP _BEZLE_SCREW_MYLAR | 40.4HL07.011 |

CHAPTER 6: FRU (Field-Replaceable Unit) list

Screws

| | | |
|------------------------------------|--|--------------|
| SCREW | SCREW M3x4(86.9A524.4R0) | 86.9A524.4R0 |
| SCREW M2.5X6 H=0.7~0.8MM | ISO M2.5X6(H=0.7~0.8MM) | 86.00E12.536 |
| SCREW M2*L3 BLACK ZN | M2*L3 BLACK ZN | 86.FR901.001 |
| SCRW TAPPING MACHINERY M2 | SCRW TAPPING MACHINERY M2 LCASE SJV40 | 86.00P55.522 |
| SCRW SELF-TAP- PING M1.4 | SCRW SELF-TAPPING M1.4 UCASE SJV40 | 86.00P54.5Q2 |
| SCREW M2.5*L5 BLACK ZN+NYLOK | M2.5*L5 BLACK ZN+NYLOK | 86.TK501.001 |
| SCREW M2.5X4L NI NYLOK | SCRW M2.5X4L NI NYLOK | 86.00H36.534 |

APPENDIX A

Test compatible components

- [Introduction](#)
- [Microsoft® Windows 7® Compatibility Test](#)

Introduction

This notebook's compatibility is tested and verified by Acer's internal testing department. Refer to the following lists for components, adapter cards, and peripherals which have passed these tests.

Microsoft® Windows 7® Compatibility Test

| Item | Device name | Vendor |
|------------------------|--|------------------|
| I/O peripherals | | |
| Access Point | Air Station Wireless NFINITI [ModeNum:WZR-G144N], 802.11n/g/b | Buffalo |
| | Buffalo Air Station NFINITI [ModeNum:WZR2-G300N], 802.11n/g/b | Buffalo |
| Bluetooth Access Point | Bluetooth Access Point [ModeNum:BT300] | X Bridge |
| Bluetooth Devices | Bluetooth Stereo Headset [ModeNum:HT820] | Motorola |
| | Bluetooth mouse [ModeNum:097855020512] | Logitech |
| | Motorola Bluetooth Wireless Headset H300 | Motorola |
| | Sony Ericsson Stereo Bluetooth Headset HBH-DS970 | Sony |
| External LCD | P243W 24-inch LCD Monitor | Acer |
| | P244W 24-inch LCD Monitor | Acer |
| | SP2208WFP 22-inch LCD Monitor | Dell |
| | UltraSharp 3008WFP 30-inch LCD Monitor | Dell |
| | 2407FPW 24-inch LCD Monito | Dell |
| | UltraSharp E2408WFP 24-inch widescreen HDMI | Dell |
| Earphone / Microphone | Hawk Stereo Headset 933 | Hawk |
| Projector | 3300MP Projector | Dell |
| SIM Card | FarEasTone 3G SIM Card | FarEasTone |
| | Chunghwa Telecom 3G SIM Card | Chunghwa Telecom |
| TV | W37G (HDMI) | Westenhouse |
| | TC-37MPK (VGA/HDMI) | Panasonic |
| USB 3G Card | Huawei mobile connect E220 USB Modem 3G (E220: HSDPA/UMTS/EDGE/GPRS/GSM) | Huawei |

| Item | Device name | Vendor |
|------------------------|---|-----------|
| USB Camera | Canon Digital IXUS 860 IS Digital Compact Camera (8.0 Megapixel CCD sensor/DIGIC III with Face Detection AF/AE/FE/28mm wide-angle lens with optical Image Stabilizer, Media storage:SD,SDHC,MMC,MMCplus, built-in SD32MB) | Canon |
| USB Flash Drive | Transcend JetFlash USB2.0 Flash Drive V85 8GB Memory Key | Transcend |
| | Apacer AH421 8GB | Apacer |
| | A-Data PD16 Vista 16GB | A-Data |
| | Transcend JetFlash USB2.0 Flash Drive V10 16GB Memory Key | Transcend |
| USB HDD | 2.5-inch Portable 80GB Hard Disk | Transcend |
| USB Hub and Others | Huawei mobile connect E220 USB Modem 3G (E220: HSDPA/UMTS/EDGE/GPRS/GSM) | Huawei |
| | PowerSync USB2.0 4-Port mini HUB(HU151W White) | PowerSync |
| | Techworks 4-Port USB2.0 Mini HUB(OW4PTUSBHB) | Techworks |
| USB Keyboard / Mouse | First Wheel Mouse | Logitech |
| | Internet Navigator Keyboard | Logitech |
| | Dell L30U 0N242F USB Keybaord | Dell |
| USB ODD | DVD+R/RW (Usb2.0) | Plextor |
| USB Printer | HP Deskjet F4280 All-in-One:Printer/ Scanner/Copier, 1200x2400dpi) | HP |
| USB Speaker / Joystick | iFun USB Speaker(JS1200UA) | JS |
| | Dell USB Speaker | Dell |
| USB Storage Drive | 6 IN 1 Flash Card Reader/Writer | PQI |
| Wireless Printer | Photosmart C309 (CC35A) All-in-One Printer (4x6 photos/CD/DVD/Quick Forms)/Scanner/Copier/Fax) Port: USB2.0/Ethernet/PictBridge/802.11g/BT | HP |
| | Photosmart C4580 All-in-One Printer (4x6 photos) /Scanner/Copier Port:USB2.0/802.11g.b/Memory Card | HP |
| Memory Card | | |
| Memory Stick | High speed 1GB Memory stick Pro Duo | Lexar |
| | MS PRO Dou 2GB High Speed | SONY |
| | MS PRO 2GB Memory Card | SONY |
| | SanDisk Meomry Stick Micro (M2) 8GB Card | SanDisk |

APPENDIX A: Test compatible components

| Item | Device name | Vendor |
|-----------------|---|-----------|
| Multimedia Card | RS-MMC 128MB Memory Card | Sandisk |
| | RS-MMC Mobile 256MB Memory Card | PQI |
| | Transcend MMC plus 4GB Card | Transcend |
| | Turbo 200X 2GB MMC Card | A-DATA |
| SD Card | 4GB SD PRO Memory Card | RiDATA |
| | SanDisk multi-use SD Class2 Memory Card 2GB | SanDisk |
| | SD card 2GB (150x Hi-Speed) | Apacer |
| | SanDisk microSDHC 4GB Card with Adapter | SanDisk |
| | Kingston SDHC SD4 32GB Card | Kingston |
| XD Card | OLYMPUS XD-Picture Card M+ 2GB Speed Card | OLYMPUS |
| | FUJIFLM XD-Picture Card TypeM 2GB | FUJIFLM |

APPENDIX B

Online support information

This section describes online technical support services available to help you repair your Packard Bell notebook.

If you are a distributor, dealer, ASP, or TPM, please refer your technical queries to your local Acer branch office. Acer branch offices and Regional Business Units may access our website. However some information sources will require a user id and password. These can be obtained directly from Acer CSD Taiwan.

Acer's website offers you convenient and valuable support resources whenever you need them. In the Technical Information section you can download information on all of Acer's Notebook, Desktop and Server models including:

- Service guides for all models
- User's manuals
- Training materials
- BIOS updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included an Acrobat File to facilitate the problem-free downloading of our technical material. Also contained on this website are:

- Detailed information on Acer's International Traveller's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

We are always looking for ways to optimize and improve our services, so if you have any suggestions or comments, please do not hesitate to communicate these to us.

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